

**DUAL CHANNEL
POLYPHONIC SYNTHESIZER
CS70M**



SERVICE MANUAL

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1, 回路図の見方 CIRCUIT DIAGRAM

ユニット名称, LはLowerを表わす

Name of the circuit board, L means a lower side.

信号の概略説明

Signal outline explanation

コネクターを表示, C2の1番ピン

Connector No. and pin No. of the terminal

端子名称

Terminal name of the assembly

ユニット名称

Name of the assembly

コネクター端子を表わす(□印), ハトメ, ラグ端子は○印で表示

□ mark indicates the connector terminal. (An eyelet and a lug terminal indications are given with ○ mark)

上図はCPA Lユニット, コネクター#9の3番端子ROよりパネル4のコネクター#2の1番端子R1へ結線されている事を示しています。

尚, 総合回路図において, 信号およびデータラインの結線を, 複雑さを避ける為にまとめて表示している場合がありますが, 同一端子名どうしが結ばれる時は, 行先端子名を表記せず, 異なる端子と接続する相手端子を表記しています。

Above is a sample interconnecting code that is assigned to terminal RO of connector 9, pin 3 on CPA circuit board, the line leaving RO connects to the terminal RI of connector 2, pin 1 on PN1 circuit board. In an overall circuit diagram, in order to avoid confusion the signal lines and data lines will be shown as one line.

In this case, when an output terminal and the terminal to which it connects (connected terminal) is the same, its name is not written on the line, however, if the terminal which the wire goes to (connected terminal) is different, its name is shown on the line.

(例)



行先が "C" でなく "K" なので, 表記

This K means that the connected terminal is K.

★信号表示

- ◇— キーコードデータ(オシロスコープで測定可)
- パルス形信号(オシロスコープで測定可)
- ▲— トリガーパルス(オシロスコープで測定可)
- 音声信号(シグナルトレーサーで可聴)
- ▶— 低周波変調信号(テスターで測定可)
- DCコントロール(テスターで測定可)

- Key code data (possible to measure with a oscilloscope)
- Pulse form signal (— do. —)
- Trigger pulse (— do. —)
- Audio signal (possible to measure with signal tracer)
- Low frequency modulation signal (possible to measure with VOM)
- DC control signal (— do. —)

CODING GUIDE (活用の手引)

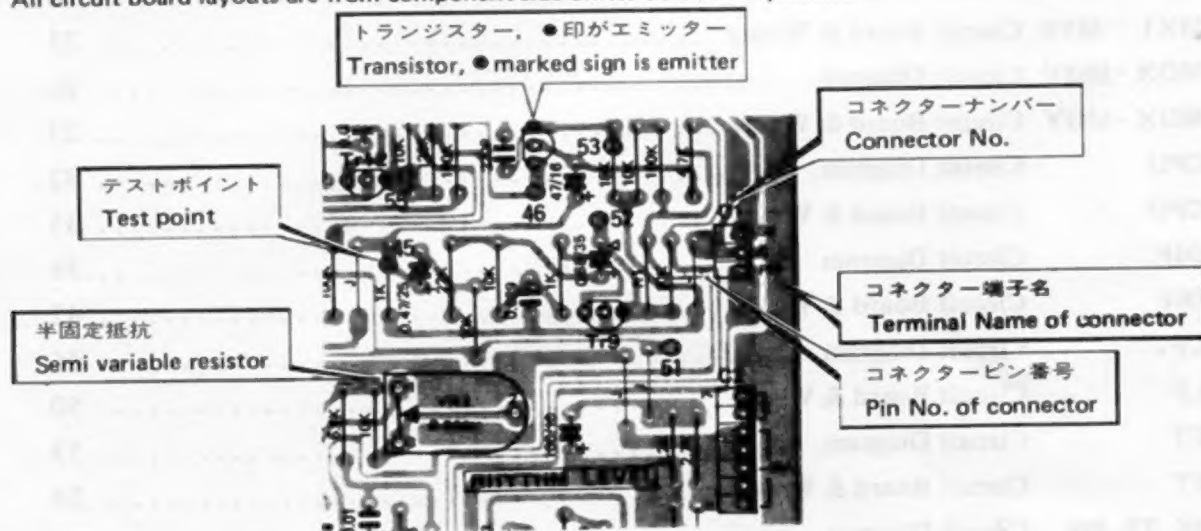
- 全てのキャパシターは特に指定がない限り μ F表示です。
- 全ての抵抗は特に指定がない限り1/4Wです。
- 全てのスイッチ、ボタン類はOFFポジションを示しています。
- 図中のK印はセラミックキャパシター1000PFを示しています。

- All Capacitors are in μ F unless otherwise specified.
- All Resistors are 1/4 watts unless otherwise specified.
- All Keyswitches, Tabswitches and push button switches show "OFF" position.
- "K" marked in Figs indicates 1000PF Ceramic Capacitors.

②, 基板図の見方 CIRCUIT BOARD

*断りのない場合は部品側からの表記です。

All circuit board layouts are from component side unless otherwise specified.



コネクターの接続はコネクター表にて表示しております。
Show the Connection Table about the connection.

DMシート(ユニット)のコネクターナンバー
Connector No. of DM circuit board (unit)

DM C1			
No.	Pin Name	Wire Color	Destination
1	AIC	GY	PU-AIC IC3-81
2	VE	YE	PN1-VE IC6-31
3	VI	WH	PN1-VI IC6-41

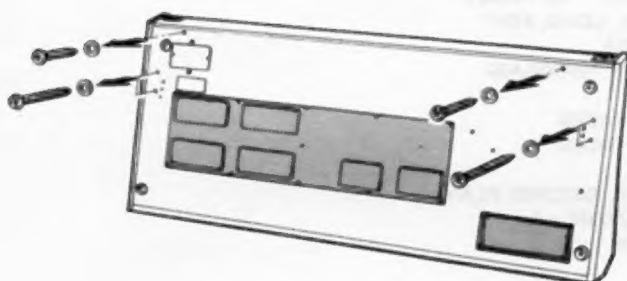
DM C2			
No.	Pin Name	Wire Color	Destination
1	VSS	BL 12	PU-E IC3-21
2	VSS	BL 12	PU-J IC3-31
3	VSS	GR 12	PN1-EC2 IC5-11
4	VSS	BL 12	PN1-VSS IC4-71
5	VSS	BL 12	PN3-VSS IC3-31
6	VSS	BL 12	EXP-VSS IC1-31
7	VSS	-	-
8	-15D	RE 12	PU-15 IC3-51
9	-15D	RE 12	PN4-15 IC1-61
10	-15D	RE 12	EXP-15 IC1-51

行先ユニット名
Connected unit name

行先端子名
Connected terminal name

行先コネクターナンバー及ピン番号
Connected connector and pin No.

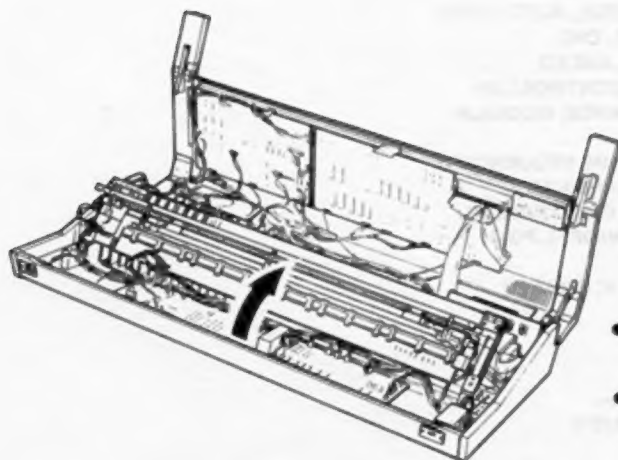
Disassembly Procedure (分解手順)



- Remove 6 screws from the bottom cover.
- 図のようにケース底側のネジ合計6本をはずします。



- Lift the panel as shown in the figure until it is fully opened.
- パネル部を図のように持ち上げ回転させて開きます。



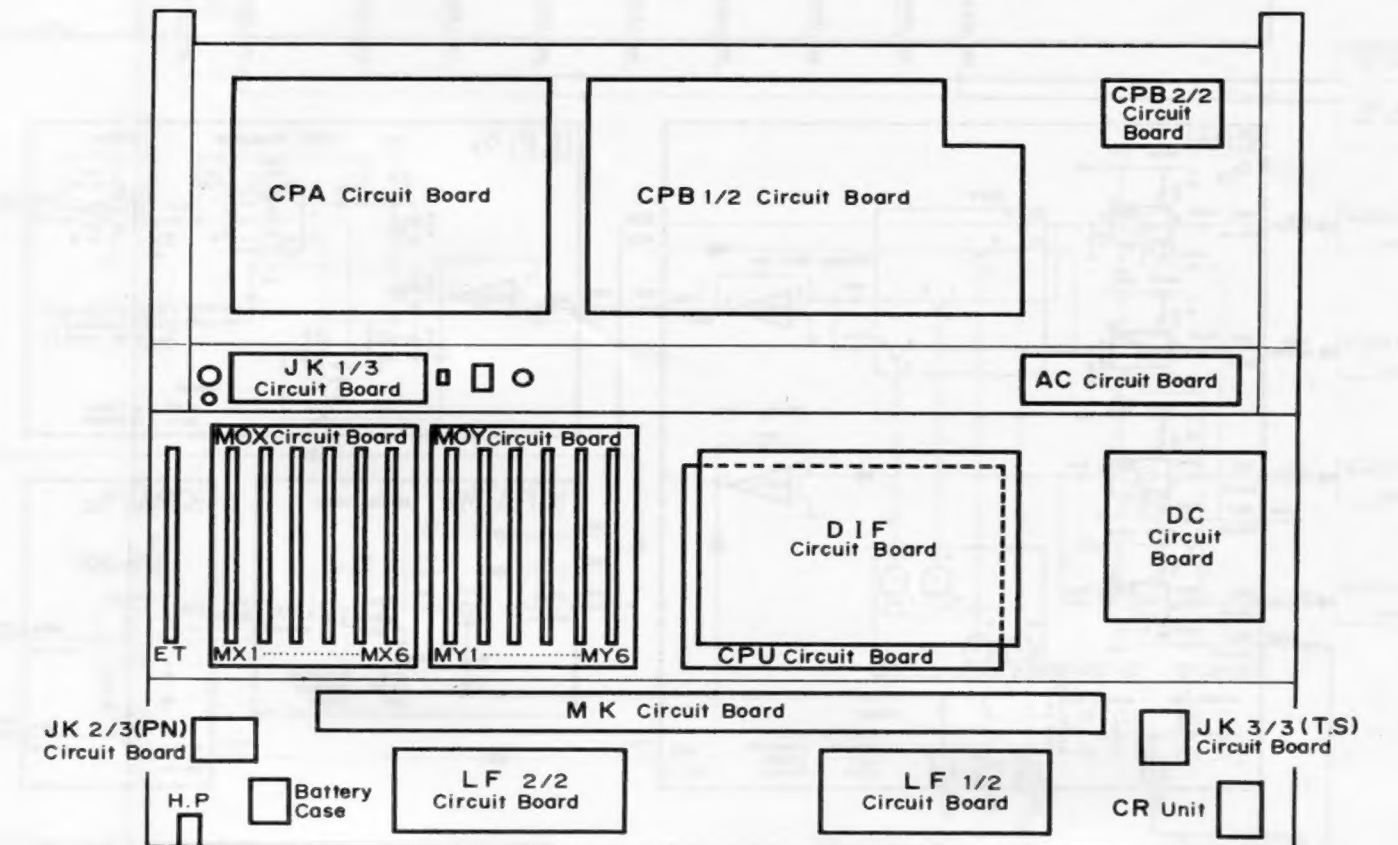
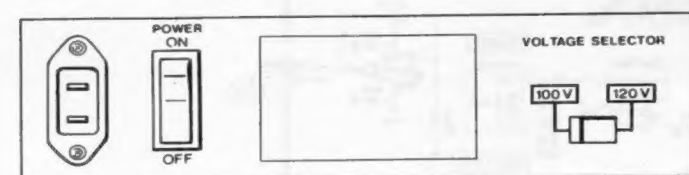
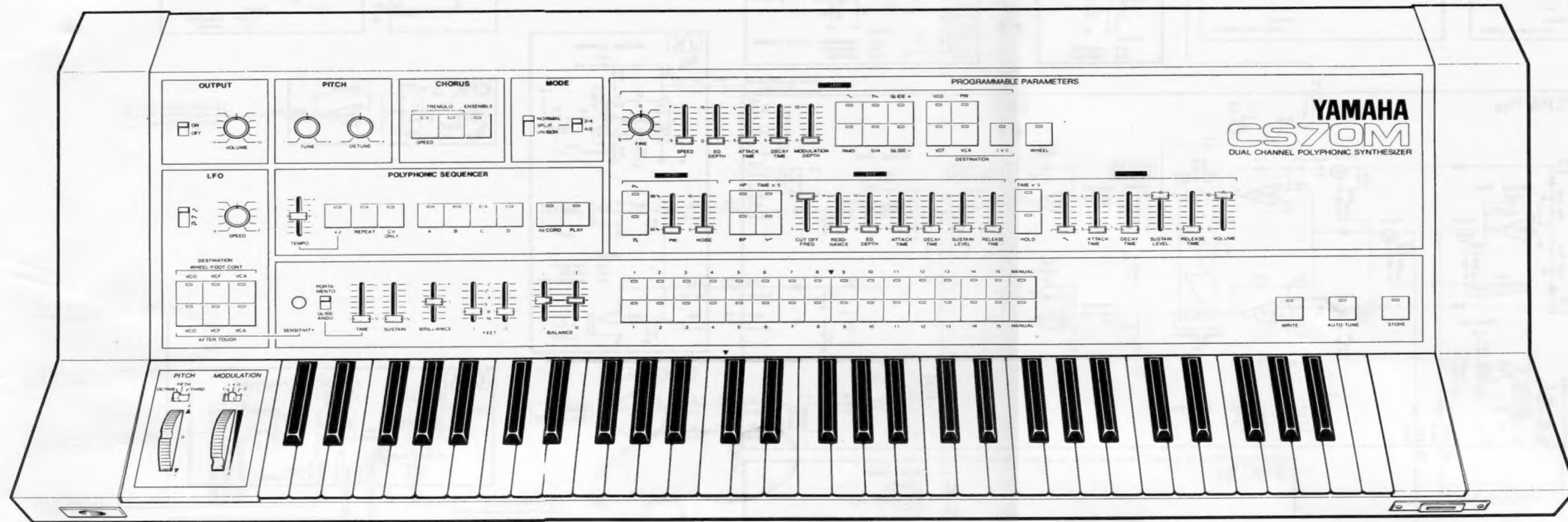
- The keyboard can now be lifted as shown in the figure.
- パネルを上げた状態で鍵盤部を図のように回転させることができます。

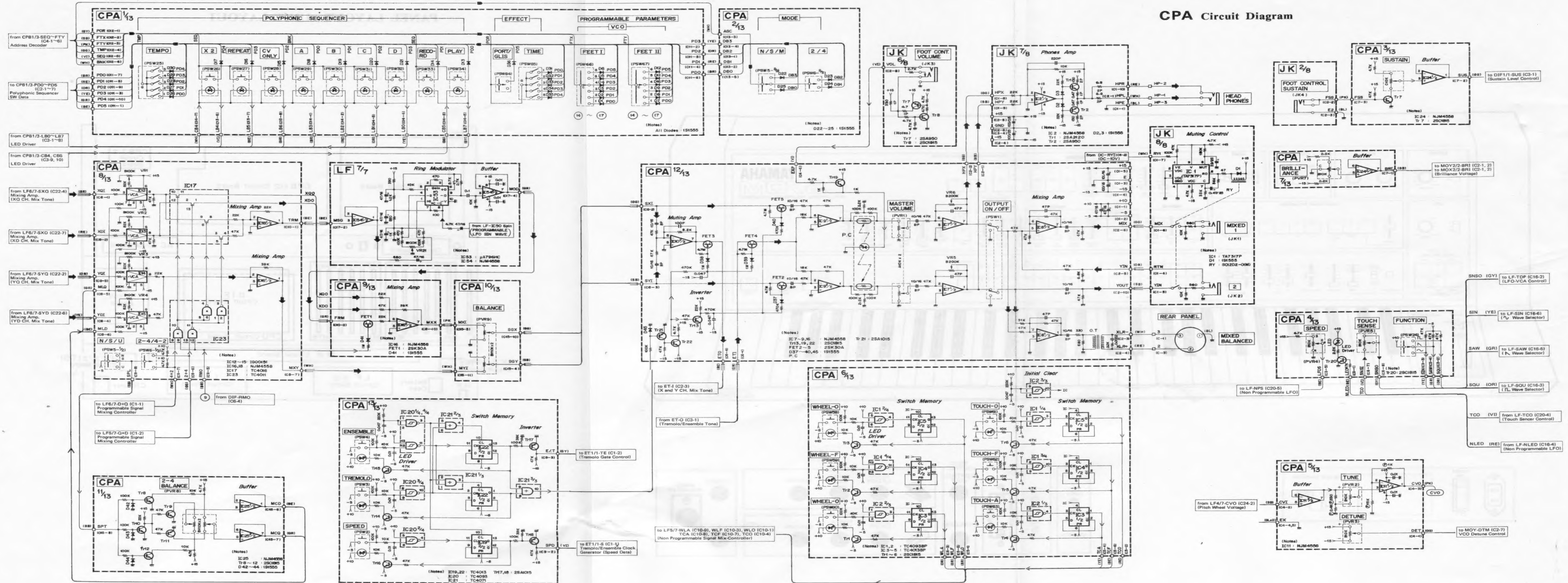
SPECIFICATIONS (総合仕様)

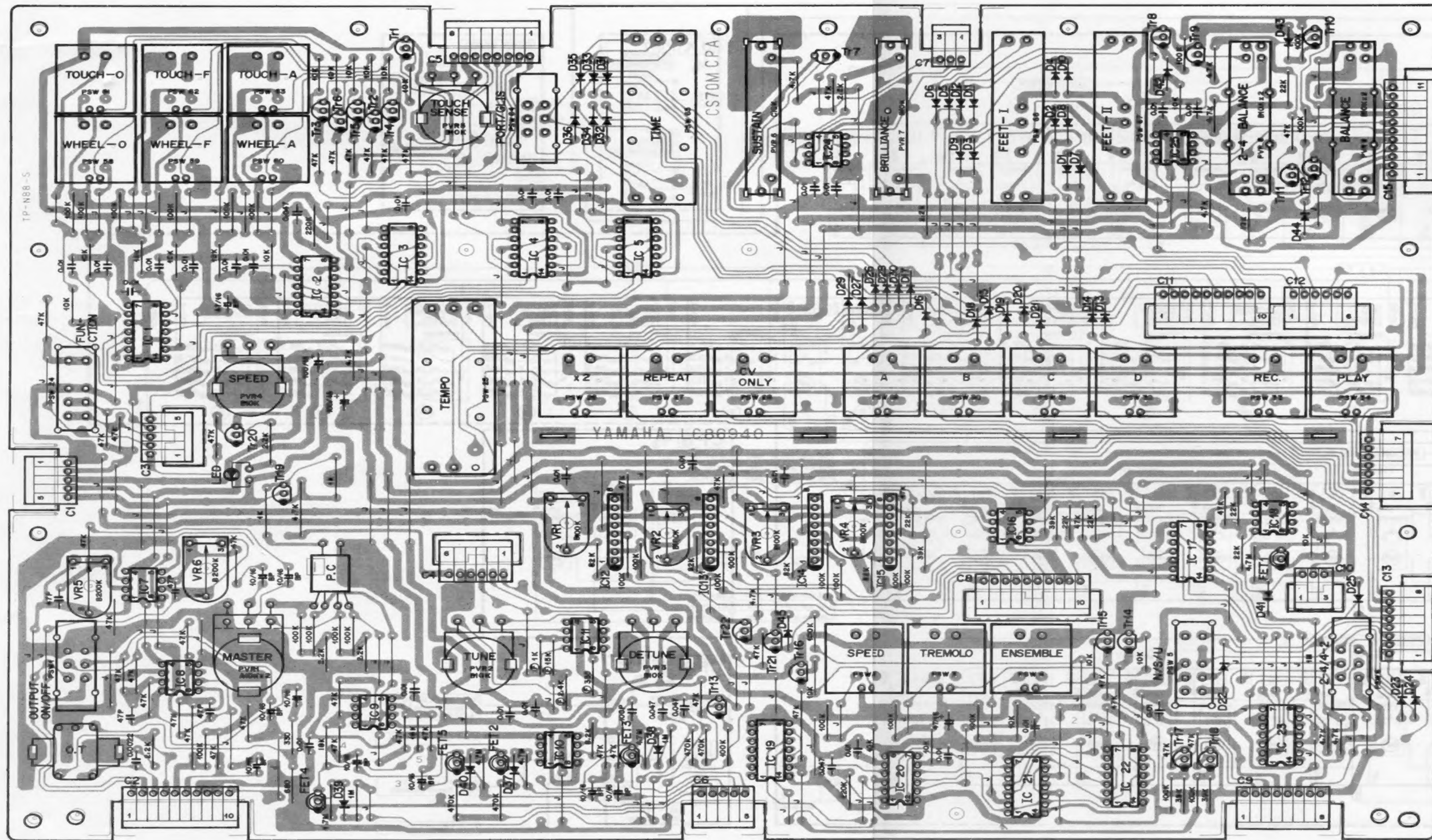
KEYBOARD	61 KEYS, C ₁ ~ C ₆ (5 OCTAVES)
SYSTEM	12 VCO, 12 VCF, 12 VCA, 24 EG, 2 LFO
OUTPUT	UP TO 6 NOTES
PROGRAMMER	CHI/CHII: EACH CH1 ~ 15, PANEL WRITE, STORE, LOAD, EDIT
ASSIGN MODE	NORMAL: 6 VOICES SPLIT (SPLIT POINT PROGRAM- MABLE): 2 VOICES + 4 VOICES 4 VOICES + 2 VOICES UNISON: 1 VOICE
SEQUENCER	4 MEMORY BANKS, RECORD, PLAY TEMPO: NORMAL/TIME x 2 REPEAT, CV ONLY
PROGRAMMABLE PARAMETERS	
VCO	WAVE: \square , \wedge FEET: 2, 2-2/3, 4, 5-1/3, 8, 16 WHITE NOISE
VCF	CUT OFF FREQ, RESONANCE, HPF/ BPF/LPF, A.D.S.R. EG: DEPTH, TIME (NORMAL/TIME x 5), POLARITY (\wedge , \vee)
VCA	SINE WAVE LEVEL, A.D.S.R. EG TIME (NORMAL/TIME x 5) VOLUME
LFO	SPEED: 0.1 ~ 100 Hz SPEED FINE: $\pm 10\%$ EG DEPTH, A.D. MODULATION DEPTH WAVE: \sim , \wedge S/H, GLIDE +/-, RMO
LFO	SPEED: 0.05 ~ 50 Hz WAVE: \sim , \wedge , \square MODULATION: WHEEL/AFTER TOUCH/FOOT PEDAL DESTINATION: VCO, VCF, VCA AFTER TOUCH SENSITIVITY
EFFECTS	ENSEMBLE/TREMOLO (SLOW/FAST), SUSTAIN TIME, BRILLIANCE, GLIS- SANDO/PORTAMENTO SPEED, PROGRAMMABLE LFO: CHI + CHII, WHEEL, HOLD
PITCH	MASTER, DETUNE CHII, WHEEL (OCTAVE/FIFTH/THIRD), AUTO TUNE
JACKS	OUTPUT: MIXED/CH1, CH2, MIXED BALANCED HEADPHONE, FOOT CONTROLLER: VOLUME, BRILLIANCE, MODULA- TION FOOT SWITCH: SUSTAIN, SEQUENCER, PORTAMENTO SOLO OUT CV, SOLO OUT TRIGGER, KEY CODE INPUT (ON/OFF), PGM LOCK/UNLOCK
POWER SUPPLIES	100, 120, 220 and 240 V, 50/60 Hz
POWER CONSUMPTION	UL, CSA 110W GENERAL 120W
DIMENSIONS	1100 x 188.5 x 498.5 mm (W x H x D) (43-1/4" x 7-1/2" x 19-1/2")
WEIGHT	28.8 kg (63.9 lbs)

Specifications subject to change without notice.

PANEL LAYOUT • UNIT LAYOUT







View from the printed pattern side of the circuit board.

KEP-NA80771-14 △

Pin No.	Pin Name	Wire Color	Destination
1	+10	GR	DC+10 (C1-5)
2	-5	BE	DC-5 (C1-6)
3	GND	BL	DC-AE (C1-2)
4	-15	YE	DC-15 (C1-9)
5	+15	BR	DC+15 (C1-7)

Pin No.	Pin Name	Wire Color	Destination
1	HPY	SB	JK-HPY (C1-9)
2	HPX	GG	JK-HPX (C1-8)
3	XLR-	WH	XLR-3 (C1-1)
4	XLR+	RE	XLR-2 (C1-3)
5	YIN	S OR	JK-RTN (C1-4)
6	MIX	S GG	JK-MIX (C1-6)
7	SE	S GG S	
8	GND	BL	JK-E (C1-2)
9	SE	S SB S	
10	YOUT	S SB	JK-YIN (C1-5)

Pin No.	Pin Name	Wire Color	Destination
1	LED	RE	LF-NLED (C16-4)
2	SQU	OR	LF-SQU (C16-3)
3	SIN	YE	LF-SIN (C16-6)
4	SAW	GR	LF-SAW (C16-5)
5	LFOS	BE	LF-NPS (C20-5)

Pin No.	Pin Name	Wire Color	Destination
1	DET	GG	MOY-DTN (C2-7)
2	CVI	SB	LF-CVO (C24-2)
3	CVO	PK	DIF-CVO (C1-2)
4	EK1	BL	LF-EK (C24-6)
5	EK2	BL	DIF-EK (C1-3)
6	EXP	VI	JK-VOL (C2-8)

Pin No.	Pin Name	Wire Color	Destination
1	WLO	BR	LF-WLO (C10-1)
2	TCO	RE	LF-TCO (C10-4)
3	WLA	OR	LF-WLA (C10-9)
4	TCA	YE	LF-TCA (C10-8)
5	WLF	GR	LF-WLF (C10-3)
6	TCF	BE	LF-TCF (C10-7)
7	SNSI	VI	LF-TCO (C20-4)
8	SNSO	GY	LF-TDP (C16-2)

Pin No.	Pin Name	Wire Color	Destination
1	ETI	S GR	ET-O (C3-1)
2	SXI	S GG	CPA-SGX (C15-10)
3	SYI	S SB	CPA-SGY (C15-4)
4	ETO	S BE	ET-I (C2-3)
5	SE	S BE S	

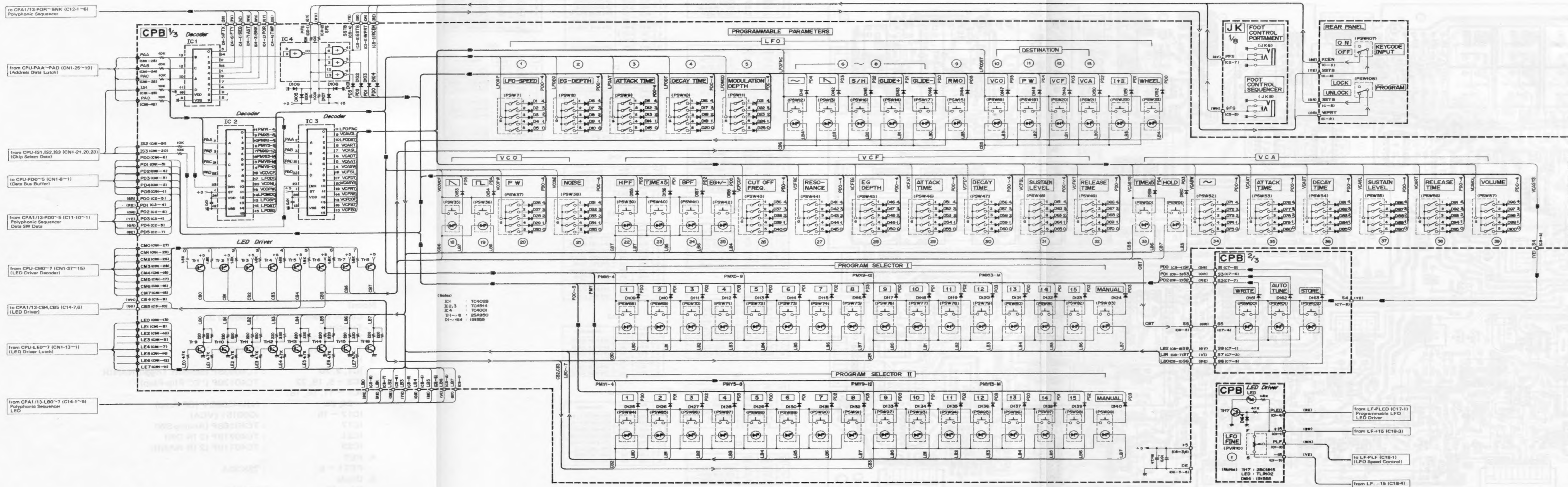
Pin No.	Pin Name	Wire Color	Destination
1	BRI	SB	MOY-BRI (C2-1)
2	SUS	GG	DIF-SUS (C3-1)
3	FSS	PK	JK-FSS (C2-2)

Pin No.	Pin Name	Wire Color	Destination
1	L83	BR	CPB-LB0 (C3-8)
2	L82	RE	CPB-LB1 (C3-7)
3	L81	OR	CPB-LB2 (C3-6)
4	L80	YE	CPB-LB3 (C3-5)
5	L87	GY	CPB-LB7 (C3-1)
6	CB5	GG	CPB-CB5 (C3-10)
7	CB4	WH	CPB-CB4 (C3-9)

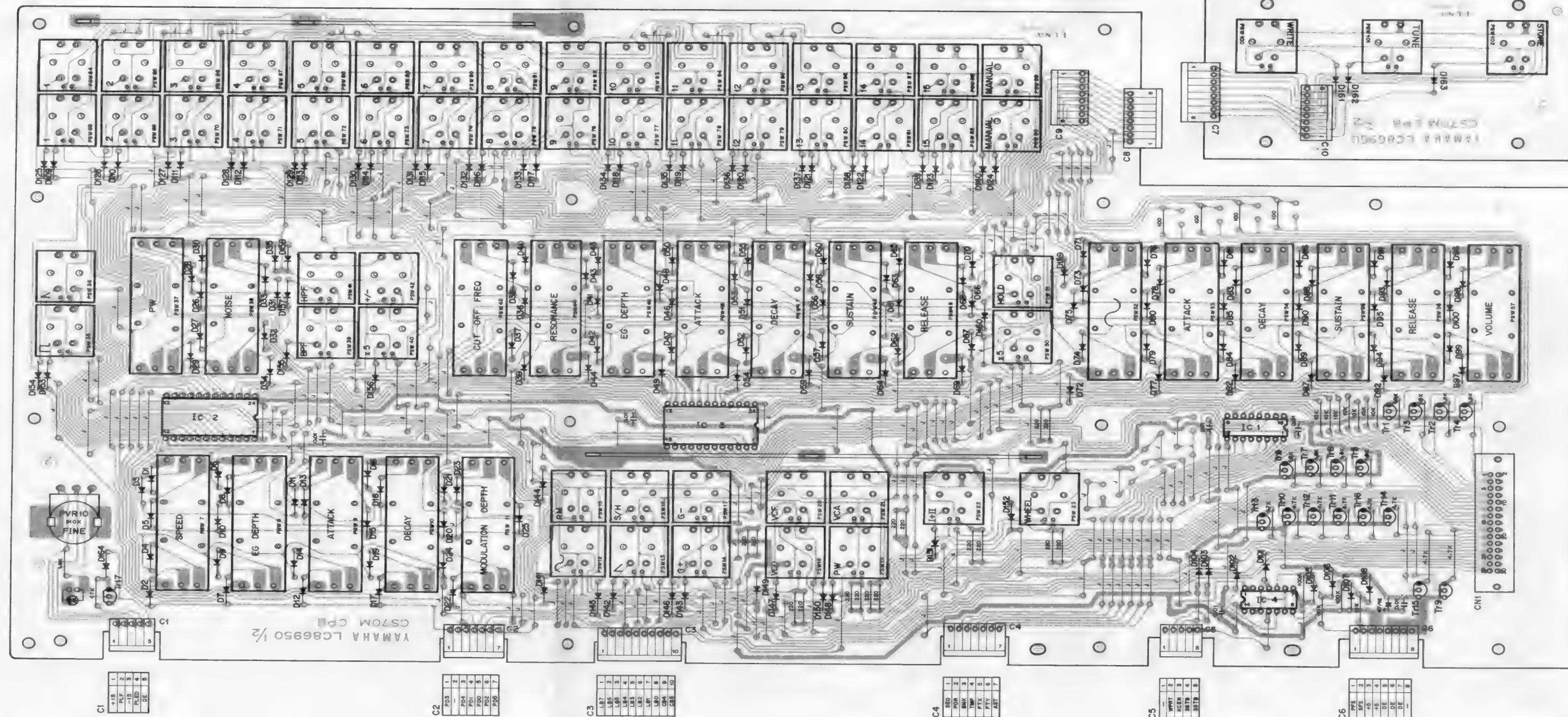
Pin No.	Pin Name	Wire Color	Destination
1	-15	YE	CPA-15 (C9-4)
2	GND	BL	CPA-GND (C9-1)
3	MYI	S PK	CPA-MXX (C8-10)
4	SGY	S SB	CPA-SYI (C6-3)
5	SE	S SB S	
6	MCD	BE	CPA-MLD (C8-6)
7	MCQ	GR	CPA-MLQ (C8-5)
8	SPT	S SB	CPA-SPL (C9-8)
9	SE	S GG S	
10	SGY	S GG	CPA-SYI (C8-3)
11	MYI	S WH	CPA-MXY (C8-7)

Notes)

- Circuit Board : LC86940 ①
- Transistor
Tr1 ~ 16, 19, 20, 22 : 2SC1815
Tr17, 18, 21 : 2SA1015
- IC
IC1, 2, 20 : TC4093BP (Schmitt Trigger NAND)
IC3 ~ 5, 19, 22 : TC4013BP ("D" Flip-Flop)
IC7 ~ 11, 16, 18, 24, 25 : NJM4558DV (OP-Amp)
IC12 ~ 15 : iG00151 (VCA)
IC17 : TC4016BP (Analog-SW)
IC21 : TC4071BP (2 IN OR)
IC23 : TC4011BP (2 IN NAND)
- FET
FET1 ~ 5 : 2SK30A
- Diode
D1 ~ 45 : 1S1555
- Resistor
(F) marked : 1% 100ppm Metal Film Resistor
- Capacitor
() marked : Ceramic Capacitor



CPB Circuit Board & Wiring



Pin No.	Pin Name	Wire Color	Destination
1	+15	BR	LF-+15 (C18-3)
2	PLF	WH	LF-PLF (C18-1)
3	-15	YE	LF--15 (C18-4)
4	PLED	RE	LF-PLED (C17-1)
5	DE	BL	CP8-DE (C8-7)

C2

Pin No	Pin Name	Wire Color	Destination
1	PD3	YE	CPA-PD3 (C11-3)
2			
3	PD4	GR	CPA-PD4 (C11-10)
4	PD1	RE	CPA-PD1 (C11-5)
5	PD0	BR	CPA-PD0 (C11-7)
6	PD2	OR	CPA-PD2 (C11-9)
7	PD5	BE	CPA PD5 (C11-1)

C3			
Pin No.	Pin Name	Wire Color	Destination
1	LB7	GY	CPA-LB7 (C14-5)
2	LB6	VI	CPA-LB4 (C13-6)
3	LB5	BE	CPA-LB5 (C13-7)
4	LB4	GR	CPA-LB6 (C13-8)
5	LB3	YE	CPA-LB0 (C14-4)
6	LB2	OR	CPA-LB1 (C14-3)
7	LB1	RE	CPA-LB2 (C14-2)
8	LB0	BR	CPA-LB3 (C14-1)
9	CB4	WH	CPA-CB4 (C14-7)
10	CB5	GG	CPA-CB5 (C14-6)

Pin No.	Pin Name	Wire Color	Destination
1	SEQ	VI	CPA-SEQ (C12-5)
2	POR	GY	CPA-POR (C12-1)
3	BNK	WH	CPA-BNK (C12-6)
4	TMP	GG	CPA-TMP (C12-4)
5	FTX	SB	CPA-FTX (C12-2)
6	FTY	PK	CPA-FTY (C12-3)
7	AST	WH	CPA-ASC (C13-3)

Pin No.	Pin Name	Wire Color	Destination
1		-	-
2	WPRT	OR	
3	KCEN	RE	
4	SSTB	YE	
5	SSTB	GR	

Pin No.	Pin Name	Wire Color	Destination
1	PFS	GY	JK-PFS (C2-7)
2	SFS	WH	JK-SFS (C3-2)
3	+5	RE	DC+5 (C1-4)
4	+5	—	—
5	DE	BL	DC-DE (C1-1)
6	DE	—	—
7	DE	BL	CPB-DE (C1-5)
8	—	—	—

Pin No.	Pin Name	Wire Color	Destination
1	S8	GY	CPB-S8 (C8-8)
2	S7	VI	CPB-S7 (C8-7)
3	S6	BE	CPB-S6 (C8-6)
4	S5	GR	CPB-S5 (C8-5)
5	S4	YE	CPB-S4 (C8-4)
6	S3	OR	CPB-S3 (C8-3)
7	S2	RE	CPB-S2 (C8-2)
8	S1	BR	CPB-S1 (C8-1)

Pin No.	Pin Name	Wire Color	Destination
1	S1	BR	CPB-S1 (C7-8)
2	S2	RE	CPB-S2 (C7-7)
3	S3	OR	CPB-S3 (C7-6)
4	S4	YE	CPB-S4 (C7-5)
5	S5	GR	CPB-S5 (C7-4)
6	S6	BE	CPB-S6 (C7-3)
7	S7	VI	CPB-S7 (C7-2)
8	S8	GY	CPB-S8 (C7-1)

CN1			
Pin No.	Pin Name	Wire Color	Destination
1	PD5		CPU-PD5 (CN1-1)
2	PD4		CPU-PD4 (CN1-2)
3	PD3		CPU-PD3 (CN1-3)
4	PD2		CPU-PD2 (CN1-4)
5	PD1		CPU-PD1 (CN1-5)
6	DD		CPU-PD0 (CN1-6)
7	LE4		CPU-LE4 (CN1-7)
8	LE1		CPU-LE1 (CN1-8)
9	LE3		CPU-LE3 (CN1-9)
10	LE2		CPU-LE2 (CN1-10)
11	LE7		CPU-LE7 (CN1-11)
12	LE6		CPU-LE6 (CN1-12)
13	LE0		CPU-LE0 (CN1-13)
14	LE5		CPU-LE5 (CN1-14)
15	CM7		CPU-CM7 (CN1-15)
16	CM6		CPU-CM6 (CN1-16)
17	CM5		CPU-CM5 (CN1-17)
18	CM4		CPU-CM4 (CN1-18)
19	PAD		CPU-PAD (CN1-19)
20	IS3		CPU-IS3 (CN1-20)
21	IS2		CPU-IS2 (CN1-21)
22	PAC		CPU-PAC (CN1-22)
23	IS1		CPU-IS1 (CN1-23)
24	PAB		CPU-PAB (CN1-24)
25	CM3		CPU-CM3 (CN1-25)
26	CM2		CPU-CM2 (CN1-26)
27	CM0		CPU-CM0 (CN1-27)
28	CM3		CPU-CM3 (CN1-28)
29	CM1		CPU-CM1 (CN1-29)
30	-		CPU-CN1_30

Notes)

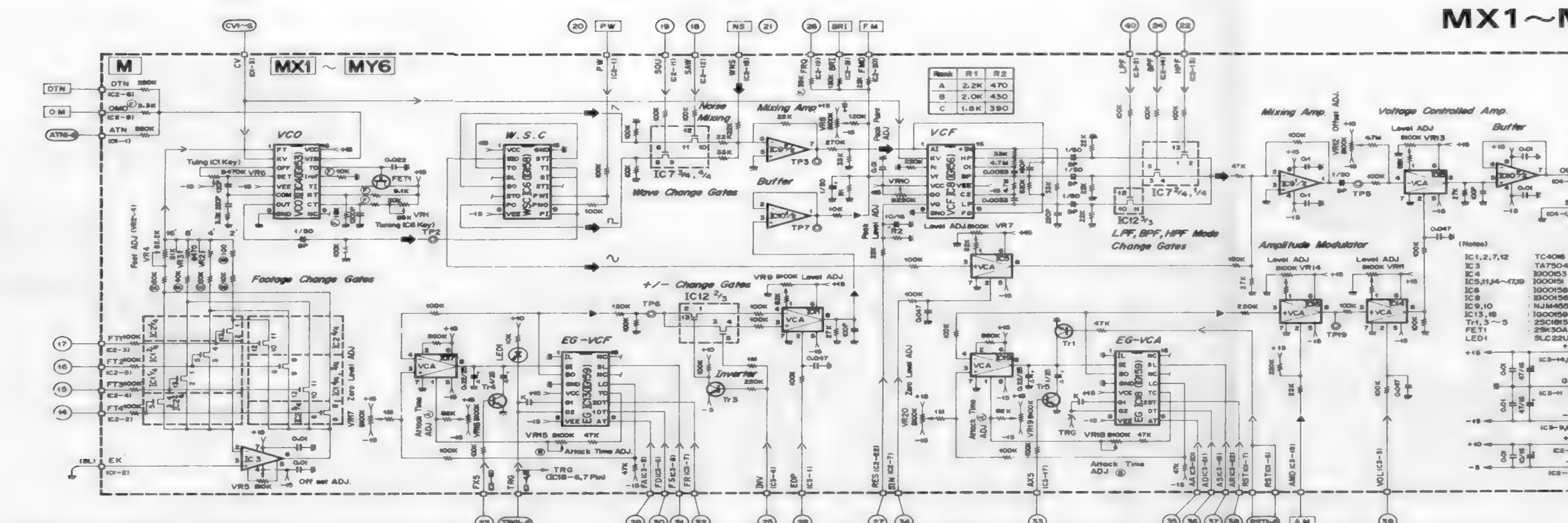
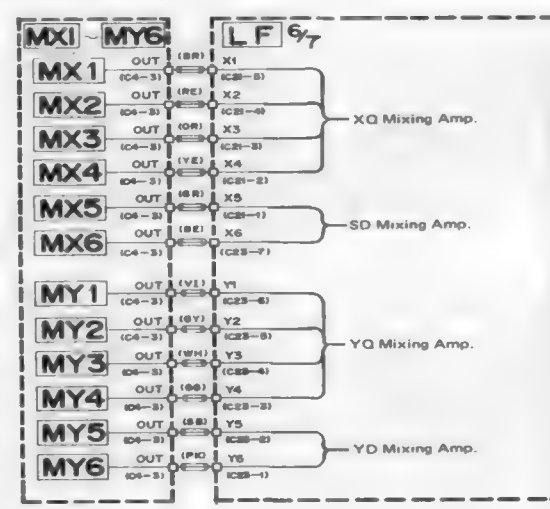
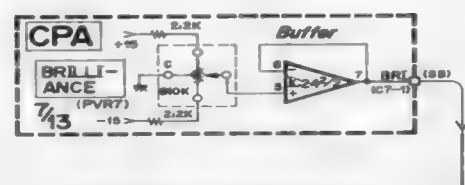
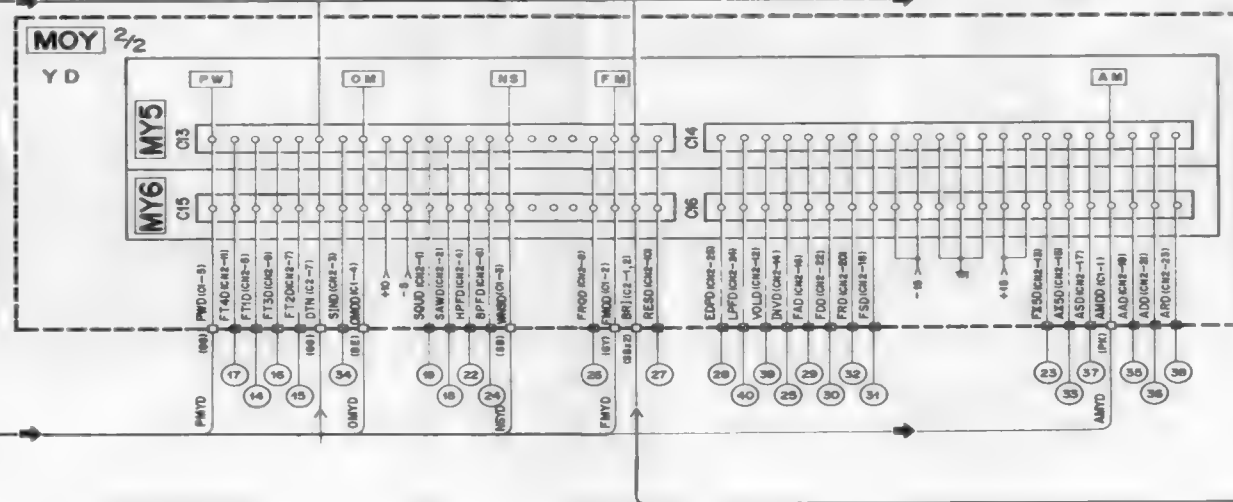
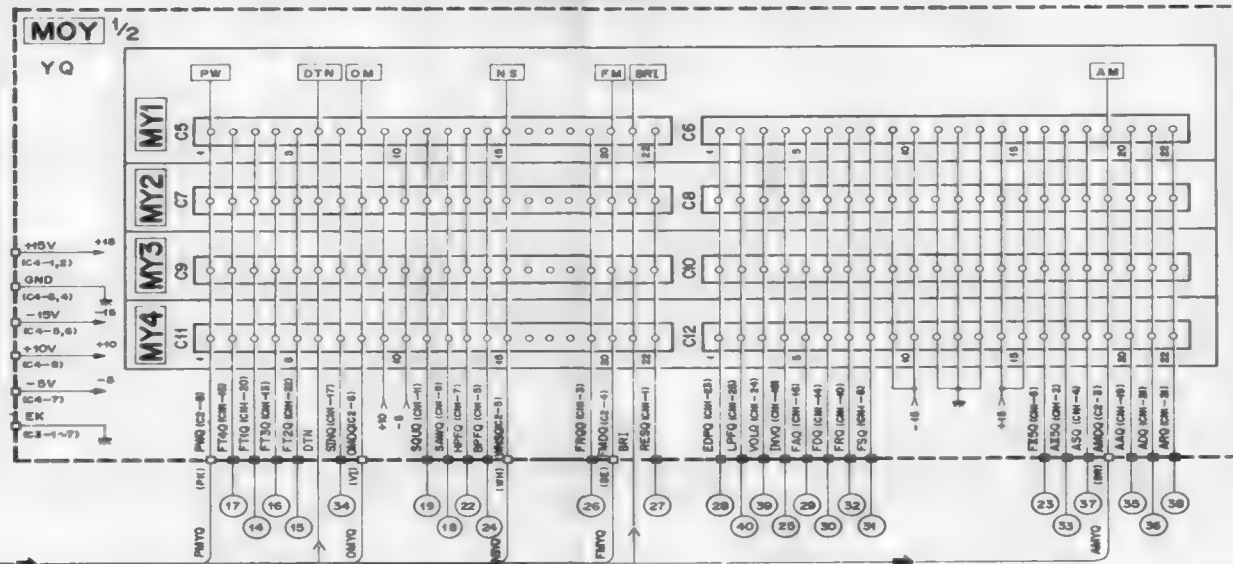
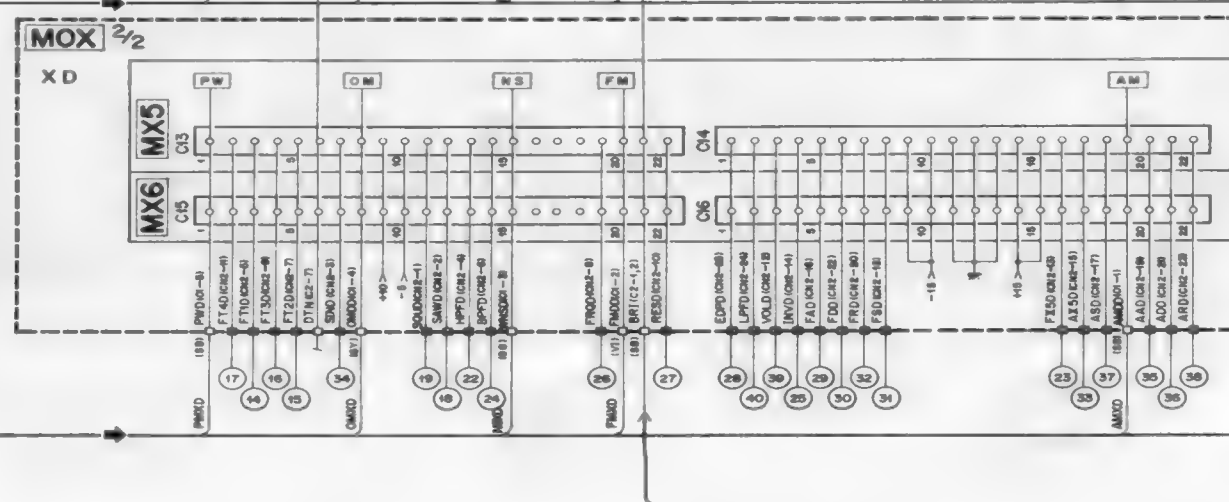
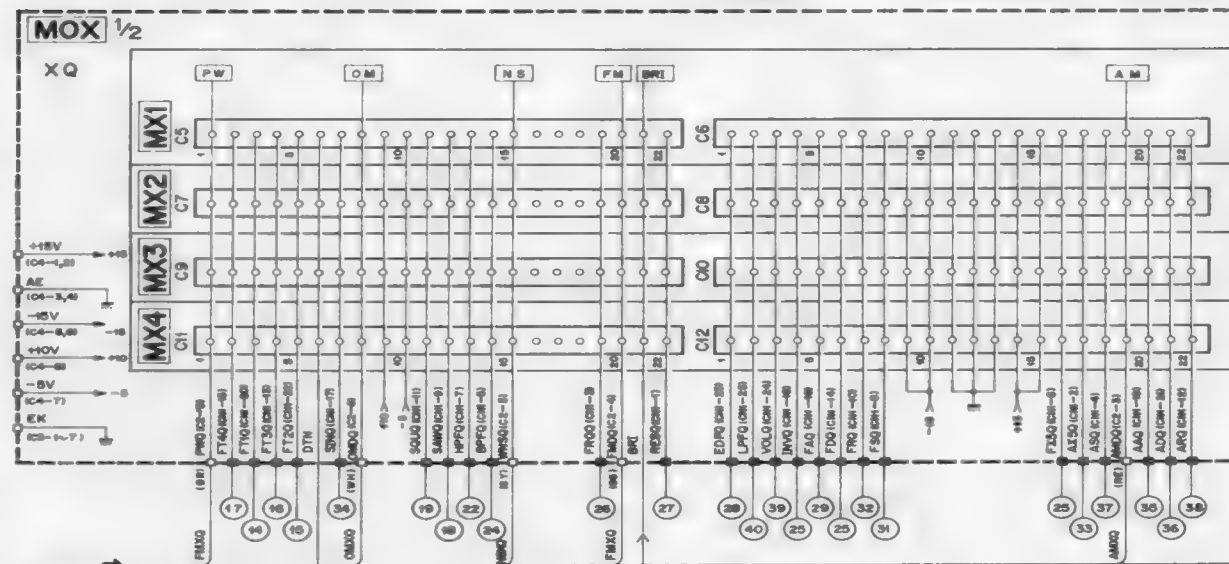
1. Circuit Board : LC86950 ②
2. Transistor
Tr1 ~ 8 : 2SA950
Tr9 ~ 17 : 2SC1815
3. IC
IC1 : TC4028BP
IC2, 3 : TC4514BP (Decoder)
IC4 : TC4001BP (2 IN NOR)
4. Diode
D1 ~ 164 : 1S1555
5. Capacitor
() marked : Ceramic Capacitor

ADDRESS NO	PSW NO	FUNCTION	PARAMETERS	DIF	LF	FUNCTION
1	7	SPEED	PLS (C3-2)	PLS (C9-4)		
2	8	EG-DEPTH	EGO (C3-3)	EGD (C9-5)		
3	9	ATTACK-TIME	LAT (C9-6)	LAT (C9-6)		
4	10	DECAY-TIME	LDY (C9-7)	LDY (C9-7)		
5	11	MODULATION-DEPTH	PDP (C3-4)	PDP (C9-8)		
6	12					
7	13					
8	14					
9	15					
10	16					
11	17					
12	18					
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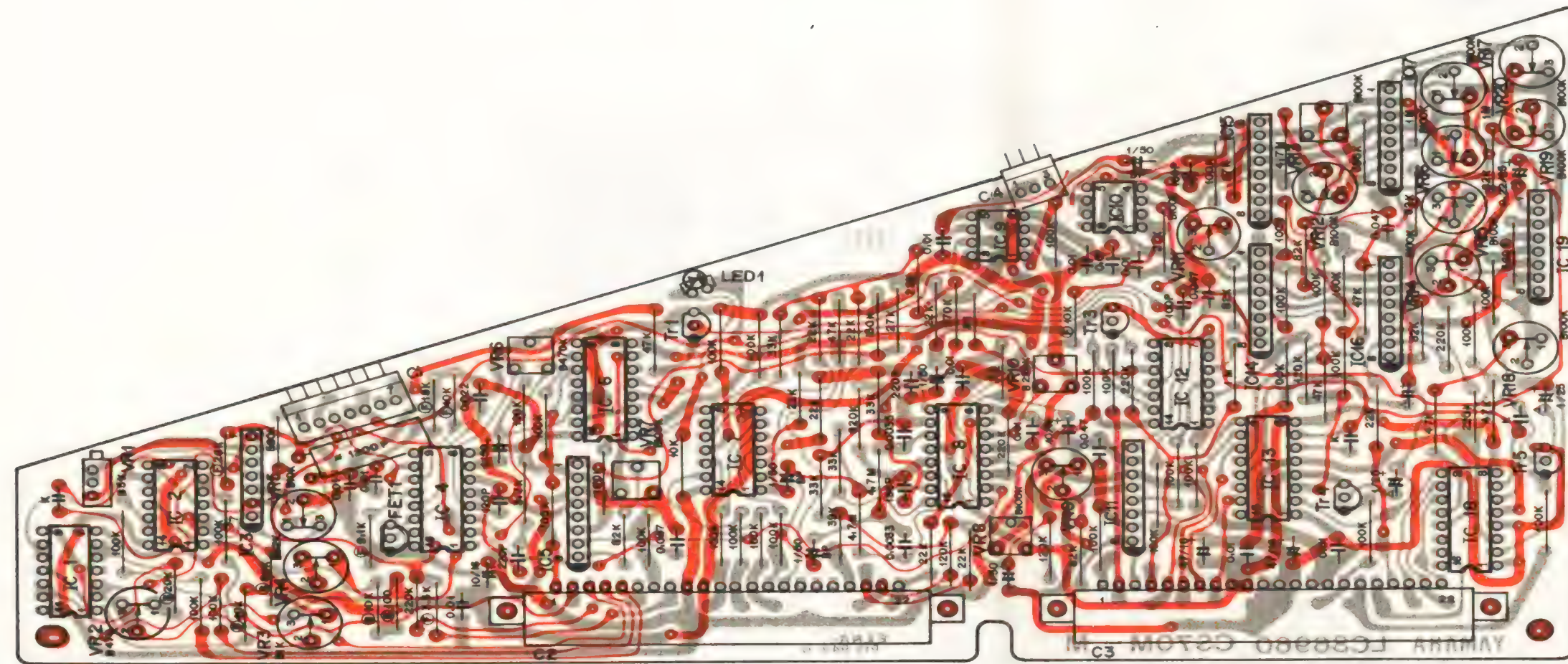
FOOTAGE CHANGE	2'	2 1/2'	4'	5 1/2'	8'	16'
FT1	H	L	L	L	L	L
FT2	L	H	H	L	H	L
FT3	L	H	H	L	H	L
FT4	L	L	L	H	L	H

ADDRESS NO	PSW NO	FUNCTION	PARAMETERS	DIF	MOX, MOY	M
1	66, 67	FEET I	FEET II			
2		(XQ, XD)	(YQ, YD)			
3						
4						
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- from LF5/7-OMXQ (C4-4) (XQ VCO MOD. Signal)
- from LF5/7-PMXQ (C5-5) (XQ WSC MOD. Signal)
- from LF5/7-FMXQ (C7-6) (XQ VCF MOD. Signal)
- from LF5/7-AMXQ (C8-4) (XQ VCA MOD. Signal)
- from LF5/7-NSXQ (C12-3) (XQ White Noise Signal)
- from LF5/7-OMYQ (C4-3) (YQ VCO MOD. Signal)
- from LF5/7-PMYQ (C5-4) (YQ WSC MOD. Signal)
- from LF5/7-FMYQ (C7-5) (YQ VCF MOD. Signal)
- from LF5/7-AMYQ (C8-3) (YQ VCA MOD. Signal)
- from LF5/7-NSYQ (C12-2) (YQ White Noise Signal)
- from LF5/7-OMXD (C4-3) (XD VCO MOD. Signal)
- from LF5/7-PMXD (C5-4) (XD WSC MOD. Signal)
- from LF5/7-FMXD (C7-2) (XD VCF MOD. Signal)
- from LF5/7-AMXD (C8-3) (XD VCA MOD. Signal)
- from LF5/7-NSXD (C12-2) (XD White Noise Signal)
- from LF5/7-OMYD (C4-1) (YD VCO MOD. Signal)
- from LF5/7-PMYD (C5-3) (YD WSC MOD. Signal)
- from LF5/7-FMYD (C7-3) (YD VCF MOD. Signal)
- from LF5/7-AMYD (C8-1) (YD VCA MOD. Signal)
- from LF5/7-NSYD (C12-4) (YD White Noise Signal)



MX1~MY6 Circuit Board & Wiring



View from the component side of the circuit board. —NOTE 8

MX1

Pin No.	Pin Name	Wire Color	Destination
1	ATN	BR	DIF-ATNX1 (C4-5)
2	EK	BL	MOX-EK (C3-1)
3	CV	RE	DIF-CV1 (C12-5)
4	TRG	OR	MY1-TRG (C1-5)
5	RST	VE	MY1-RST (C1-7)

MX2

Pin No.	Pin Name	Wire Color	Destination
1	ATN	RE	DIF-ATNX2 (C4-4)
2	EK	BL	MOX-EK (C3-2)
3	CV	OR	DIF-CV2 (C14-2)
4	TRG	GR	MY2-TRG (C1-5)
5	RST	BE	MY2-RST (C1-7)

MX3

Pin No.	Pin Name	Wire Color	Destination
1	ATN	OR	DIF-ATNX3 (C4-3)
2	EK	BL	MOX-EK (C3-3)
3	CV	YE	DIF-CV3 (C12-3)
4	TRG	BE	MY3-TRG (C1-5)
5	RST	VI	MY3-RST (C1-7)

MX4

Pin No.	Pin Name	Wire Color	Destination
1	ATN	YE	DIF-ATNX4 (C4-6)
2	EK	BL	MOX-EK (C3-4)
3	CV	GR	DIF-CV4 (C14-4)
4	TRG	GR	MY4-TRG (C1-5)
5	RST	WH	MY4-RST (C1-7)

MX5

Pin No.	Pin Name	Wire Color	Destination
1	ATN	GR	DIF-ATNX5 (C4-1)
2	EK	BL	MOX-EK (C3-5)
3	CV	BE	DIF-CV5 (C14-8)
4	TRG	GR	MY5-TRG (C1-5)
5	RST	WH	MY5-RST (C1-7)

MX6

Pin No.	Pin Name	Wire Color	Destination
1	ATN	BE	DIF-ATNX6 (C4-2)
2	EK	BL	MOX-EK (C3-6)
3	CV	VI	DIF-CV6 (C14-6)
4	TRG	GR	MY6-TRG (C1-5)
5	RST	BE	MY6-RST (C1-7)

MY1

Pin No.	Pin Name	Wire Color	Destination
1	ATN	VI	DIF-ATNY1 (C19-4)
2	EK	BL	MOY-EK (C3-1)
3	CV	RE	DIF-CV1 (C12-6)
4	TRG	OR	DIF-TRG1 (C10-7)
5	RST	YE	DIF-RST1 (C15-2)

MY2

Pin No.	Pin Name	Wire Color	Destination
1	ATN	GY	DIF-ATNY2 (C19-6)
2	EK	BL	MOY-EK (C3-2)
3	CV	OR	DIF-CV2 (C14-3)
4	TRG	GR	DIF-TRG2 (C8-5)
5	RST	BE	DIF-RST2 (C15-4)

MY3

Pin No.	Pin Name	Wire Color	Destination
1	ATN	WH	DIF-ATNY3 (C19-5)
2	EK	BL	MOY-EK (C3-3)
3	CV	GR	DIF-CV3 (C12-4)
4	TRG	BE	DIF-TRG3 (C10-2)
5	RST	VI	DIF-RST3 (C13-5)

MY4

Pin No.	Pin Name	Wire Color	Destination
1	ATN	SB	DIF-ATNY4 (C19-7)
2	EK	BL	MOY-EK (C3-4)
3	CV	BE	DIF-CV4 (C14-5)
4	TRG	VI	DIF-TRG4 (C8-4)
5	RST	GY	DIF-RST4 (C13-7)

MY5

Pin No.	Pin Name	Wire Color	Destination
1	ATN	GG	DIF-ATNY5 (C19-2)
2	EK	BL	MOY-EK (C3-5)
3	CV	BE	DIF-CV5 (C14-9)
4	TRG	GY	DIF-TRG5 (C10-3)
5	RST	WH	DIF-RST5 (C15-6)

MY6

Pin No.	Pin Name	Wire Color	Destination
1	ATN	PK	DIF-ATNY6 (C19-3)
2	EK	BL	MOY-EK (C3-6)
3	CV	VI	DIF-CV6 (C14-7)
4	TRG	WH	DIF-TRG6 (C10-6)
5	RST	SB	DIF-RST6 (C15-8)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S BR S	—
3	OUT	S BR	LF-X1 (C21-5)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S OR S	—
3	OUT	S RE	LF-X2 (C21-4)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S OR S	—
3	OUT	S OR	LF-X3 (C21-3)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S YE S	—
3	OUT	S YE	LF-X4 (C21-2)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S GR S	—
3	OUT	S GR	LF-X5 (C21-1)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S BE S	—
3	OUT	S BE	LF-X6 (C23-7)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S VI S	—
3	OUT	S VI	LF-Y1 (C23-6)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S GY S	—
3	OUT	S GY	LF-Y2 (C23-5)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S WH S	—
3	OUT	S WH	LF-Y3 (C23-4)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S GG S	—
3	OUT	S GG	LF-Y4 (C23-3)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S SB S	—
3	OUT	S SB	LF-Y5 (C23-2)

C4

Pin No.	Pin Name	Wire Color	Destination
1	SE	—	—
2	SE	S PK S	—
3	OUT	S PK	LF-Y6 (C23-1)

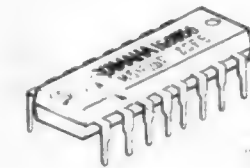
Notes)

- Circuit Board : LC86960 ②
- Transistor
Tr1, 3 ~ 5 : 2SC1815
- FET
FET1 : 2SK30A
- IC
IC1, 2, 7, 12 : TC4016BP (Analog-SW)
IC3 : TA7504S
IC4 : iG00153 (VCOIII)
IC5, 11, 14 ~ 17, 19 : iG00151 (VCA)
IC6 : iG00158
IC8 : iG00156 (+VCF)
IC9, 10 : NJM4558DV (OP-Amp)
IC13, 18 : iG00159
- Capacitor
K marked : 1000P Ceramic Capacitor
() marked : Ceramic Capacitor
* marked : Polystyrene Capacitor
▲ marked : Solid Aluminum Capacitor
- Resistor
Ⓑ marked : 0.1% 25ppm Metal Film Resistor
Ⓕ marked : 1% 100ppm

- Set "R1, R2" in accordance with the following table.
See Fig. 1 below for location of VCF (IC8) rank.

Rank	R1	R2
A	2.2K	470
B	2.0K	430
C	1.8K	390

IC (VCF) illustration



"A" mark indicates the rank of VCF.

- Difference between MX and MY

MX1 ~ 6	NA 80827	OPEN
MY1 ~ 6	NA 80774	220 K

C2

Pin No.	Pin Name	Wire Color	Destination
1	EDP	—	MOX-EDPQ (C6-1)
2	FT4	—	MOX-FT4Q (C6-2)
3	FT1	—	MOX-FT1Q (C6-3)
4	FT3	—	MOX-FT3Q (C6-4)
5	FT2	—	MOX-FT2Q (C6-5)
6	DTN	—	MOX-DTNQ (C6-6)
7	SIN	—	MOX-SINQ (C6-7)
8	OMD	—	MOX-OMDQ (C6-8)
9	+10	—	MOX-+10 (C6-9)
10	-5	—	MOX-5 (C6-10)
11	SQU	—	MOX-SQUQ (C6-11)
12	SAW	—	MOX-SAWQ (C6-12)
13	HPF	—	MOX-HPFQ (C6-13)
14	BPF	—	MOX-BPFQ (C6-14)
15	WNS	—	MOX-WNSQ (C6-15)
16	—	—	—
17	—	—	—
18	—	—	—
19	FRQ	—	MOX-FRQQ (C6-19)
20	FMD	—	MOX-FMDQ (C6-20)
21	BRI	—	MOX-BRIQ (C6-21)
22	RES	—	MOX-RESQ (C6-22)

MX1

C3

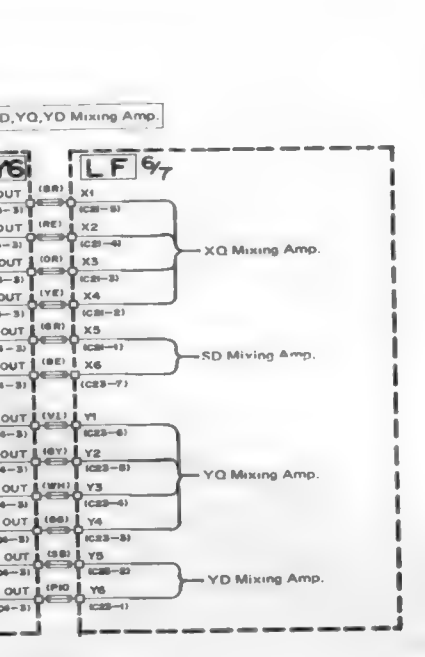
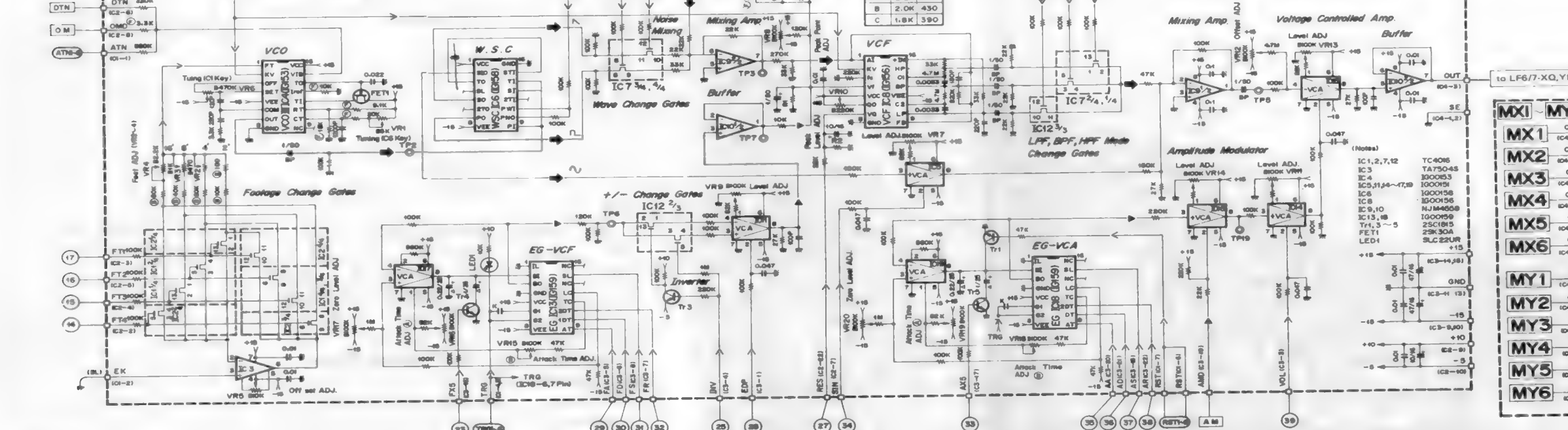
Pin No.	Pin Name	Wire Color	Destination
1	EDP	—	MOX-EDPQ (C6-1)
2	LPF	—	MOX-LPFQ (C6-2)
3	VOL	—	MOX-VOLQ (C6-3)
4	INV	—	MOX-INVQ (C6-4)
5	FA	—	MOX-FAQ (C6-5)
6	FD	—	MOX-FDQ (C6-6)
7	FR	—	MOX-FRQ (C6-7)
8	FS	—	MOX-FSQ (C6-8)
9	-15	—	MOX-15 (C6-9)
10	-15	—	MOX-15 (C6-10)
11	GND	—	MOX-AE (C6-11)
12	GND	—	MOX-AE (C6-12)
13	GND	—	MOX-AE (C6-13)
14	+15	—	MOX-+15 (C6-14)
15	+15	—	MOX-+15 (C6-15)
16	FX5	—	MOX-FX5Q (C6-16)
17	AX5	—	MOX-AX5Q (C6-17)
18	AS	—	MOX-ASQ (C6-18)
19	AMD	—	MOX-AMQ (C6-19)
20	AA	—	MOX-AAQ (C6-20)
21	AD	—	MOX-ADQ (C6-21)
22	AR	—	MOX-ARQ (C6-22)

Connector No.	Destination
MX2 C2	C7
MX3 C2	C8
MX4 C2	C9
MX5 C2	C10
MX6 C2	C11
MX7 C2	C12
MX8 C2	C13
MX9 C2	C14
MX10 C2	C15
MX11 C2	C16
MX12 C2	C17
MX13 C2	C18
MX14 C2	C19
MX15 C2	C20
MX16 C2	C21
MX17 C2	C22
MX18 C2	C23
MX19 C2	C24
MX20 C2	C25
MX21 C2	C26
MX22 C2	C27

ADDRESS NO	PSW NO	FUNCTION	DIF	LF	FUNCTION
1	7	SPEED	PLS (C3-2)	PLS (C3-4)	
2	8	EG-DEPTH	EGD (C3-3)	EGD (C3-5)	
3	9	ATTACK-TIME	LAT (C3-6)	LAT (C3-8)	
4	10	DECAY-TIME	LDY (C3-9)	LDY (C3-11)	
5	11	MODULATION-DEPTH	PDP (C3-12)	PDP (C3-14)	
6	12	~			
7	13	~			
8	14	GLIDE +			
9	15	GLIDE -			
10	16	RMO	RMO (C3-15)	RMO (C3-17)	
11	17	RMO	RMO (C3-18)	RMO (C3-20)	
12	18	VCO DESTINATION	PLD (C3-21)	PLD (C3-23)	
13	19	PLP	PLP (C3-24)	PLP (C3-26)	
14	20	VCF	PLF (C3-27)	PLF (C3-29)	
15	21	VCA	PLA (C3-30)	PLA (C3-32)	
16	22	WHEEL	ADD (C3-33)	ADD (C3-35)	
17	23	~			

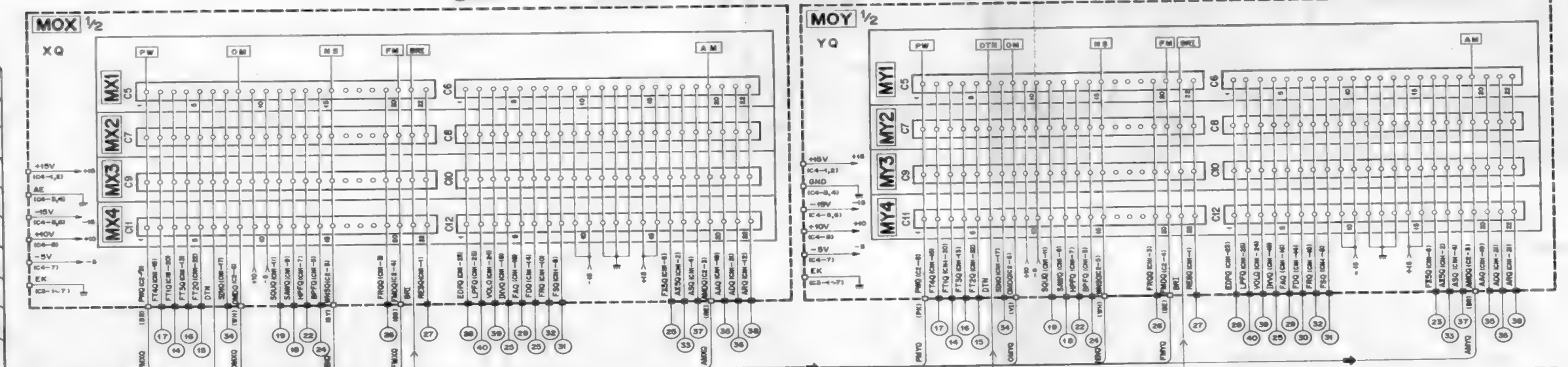
ADDRESS NO	PSW NO	FUNCTION	DIF	LF	FUNCTION
18	24	~			
19	25	~			
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22	28	~			
23	29	~			
24	30	~			
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51	57	~			
52	58	~			
53	59	~			
54	60	~			

ADDRESS NO	PSW NO	FUNCTION	DIF	LF	FUNCTION
55	61	~			
56	62	~			
57	63	~			
58	64	~			
59	65	~			
60	66	~			
61	67	~			
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92	98	~			
93	99	~			
94	100	~			



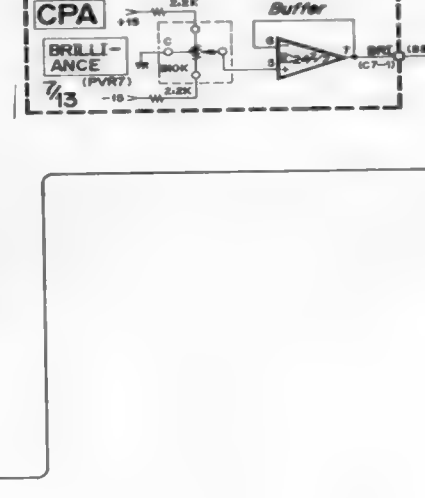
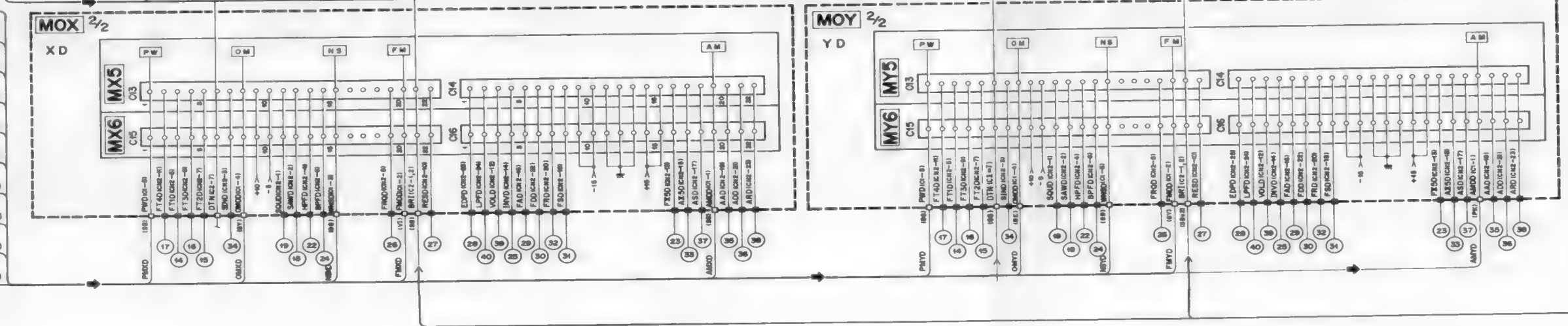
ADDRESS NO	PSW NO	FUNCTION	DIF	LF	FUNCTION
1	7	SPEED	PLS (C3-2)	PLS (C3-4)	
2	8	EG-DEPTH	EGD (C3-3)	EGD (C3-5)	
3	9	ATTACK-TIME	LAT (C3-6)	LAT (C3-8)	
4	10	DECAY-TIME	LDY (C3-9)	LDY (C3-11)	
5	11	MODULATION-DEPTH	PDP (C3-12)	PDP (C3-14)	
6	12	~			
7	13	~			
8	14	GLIDE +			
9	15	GLIDE -			
10	16	RMO	RMO (C3-15)	RMO (C3-17)	
11	17	RMO	RMO (C3-18)	RMO (C3-20)	
12	18	VCO DESTINATION	PLD (C3-21)	PLD (C3-23)	
13	19	PLP	PLP (C3-24)	PLP (C3-26)	
14	20	VCF	PLF (C3-27)	PLF (C3-29)	
15	21	VCA	PLA (C3-30)	PLA (C3-32)	
16	22	WHEEL	ADD (C3-33)	ADD (C3-35)	
17	23	~			

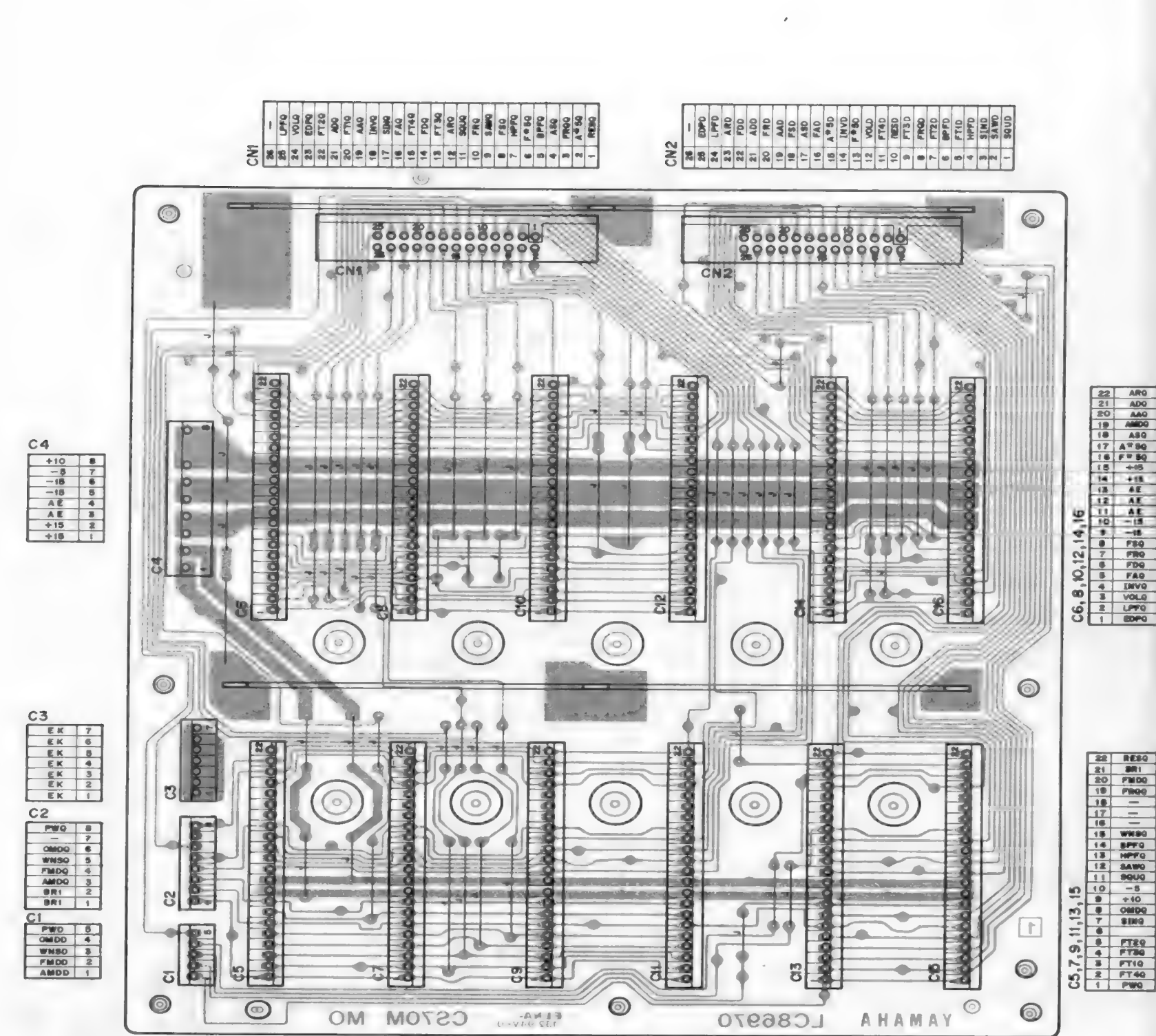
ADDRESS NO	PSW NO	FUNCTION	DIF	LF	FUNCTION
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19	25	~			
20	26	~			
21	27	~			
22	28	~			
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50	56	~			
51	57	~			
52	58	~			
53	59	~			
54	60	~			



ADDRESS NO	PSW NO	FUNCTION	DIF	LF	FUNCTION
1	7	SPEED	PLS (C3-2)	PLS (C3-4)	
2	8	EG-DEPTH	EGD (C3-3)	EGD (C3-5)	
3	9	ATTACK-TIME	LAT (C3-6)	LAT (C3-8)	
4	10	DECAY-TIME	LDY (C3-9)	LDY (C3-11)	
5	11	MODULATION-DEPTH	PDP (C3-12)	PDP (C3-14)	
6	12	~			
7	13	~			
8	14	GLIDE +			
9	15	GLIDE -			
10	16	RMO	RMO (C3-15)	RMO (C3-17)	
11	17	RMO	RMO (C3-18)	RMO (C3-20)	
12	18	VCO DESTINATION	PLD (C3-21)	PLD (C3-23)	
13	19	PLP	PLP (C3-24)	PLP (C3-26)	
14	20	VCF	PLF (C3-27)	PLF (C3-29)	
15	21	VCA	PLA (C3-30)	PLA (C3-32)	
16	22	WHEEL	ADD (C3-33)	ADD (C3-35)	
17	23	~			

ADDRESS NO	PSW NO	FUNCTION	DIF	LF	FUNCTION
18	24	~			
19	25	~			
20	26	~			
21	27	~			
22	28	~			
23	29	~			
24	30	~			
25	31	~			
26	32	~			
27	33	~			
28	34	~			
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45	51	~			
46	52	~			
47	53	~			
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50	56	~			
51	57	~			
52	58	~			
53	59	~			
54	60	~			





View from the component side of the circuit board.

Note)
1. Circuit Board : LC86970

MOX

C1

Pin No.	Pin Name	Wire Color	Destination
1	AMDD	SB	LF-AMXD (C8-3)
2	FMDQ	VI	LF-FMXD (C7-2)
3	WNDS	GG	LF-NSXD (C12-2)
4	OMDD	GY	LF-OMXD (C4-3)
5	PWD	SB	LF-PMXD (C5-4)

C2

Pin No.	Pin Name	Wire Color	Destination
1	BRI	SB	MOY-BRI (C2-2)
2	AMDD	RE	LF-AMXD (C8-4)
3	FMDQ	GG	LF-FMXQ (C7-6)
4	WNDS	GY	LF-NSXD (C12-3)
5	OMDD	GY	LF-OMXD (C4-4)
6	PWD	BR	LF-PMXD (C5-5)

C3

Pin No.	Pin Name	Wire Color	Destination
1	EK	BL	MX1-EK (C1-2)
2	EK	BL	MX2-EK (C1-2)
3	EK	BL	MX3-EK (C1-2)
4	EK	BL	MX4-EK (C1-2)
5	EK	BL	MX5-EK (C1-2)
6	EK	BL	MX6-EK (C1-2)
7	EK	BL	DIF-EK (C14-1)

CN1

Pin No.	Pin Name	Destination
1	RESQ	DIF-RESQX (CN1-1)
2	A*SQ	DIF-A*SQX (CN1-2)
3	FRQX	DIF-FRQXQ (CN1-3)
4	ASQ	DIF-ASQX (CN1-4)
5	BPFX	DIF-BPFXQ (CN1-5)
6	F*SQ	DIF-F*SQX (CN1-6)
7	HPFX	DIF-HPFXQ (CN1-7)
8	FSQ	DIF-FSQX (CN1-8)
9	SAWQ	DIF-SAWXQ (CN1-9)
10	FRQ	DIF-FRQXQ (CN1-10)
11	SQUX	DIF-SQUXQ (CN1-11)
12	ARQ	DIF-ARXQ (CN1-12)
13	FT3Q	DIF-FT3XQ (CN1-13)
14	FDQ	DIF-FDXQ (CN1-14)
15	FT4Q	DIF-FT4XQ (CN1-15)
16	FAQ	DIF-FAQXQ (CN1-16)
17	SINQ	DIF-SINXQ (CN1-17)
18	INVQ	DIF-INVXQ (CN1-18)
19	AAQ	DIF-AAQXQ (CN1-19)
20	FT1Q	DIF-FT1XQ (CN1-20)
21	ADQ	DIF-ADXQ (CN1-21)
22	FT2Q	DIF-FT2XQ (CN1-22)
23	EDPX	DIF-EDPXQ (CN1-23)
24	VOLQ	DIF-VOLXQ (CN1-24)
25	LPFQ	DIF-LPFQX (CN1-25)
26	-	-

CN2

Pin No.	Pin Name	Destination
1	SQUX	DIF-SQUXQ (CN2-1)
2	SAWD	DIF-SAWXQ (CN2-2)
3	SINQ	DIF-SINXQ (CN2-3)
4	HPFD	DIF-HPFXQ (CN2-4)
5	FT1Q	DIF-FT1XQ (CN2-5)
6	BPFD	DIF-BPFXQ (CN2-6)
7	FT2Q	DIF-FT2XQ (CN2-7)
8	FRQD	DIF-FRQXQ (CN2-8)
9	FT3Q	DIF-FT3XQ (CN2-9)
10	RESQ	DIF-RESQX (CN2-10)
11	FT4Q	DIF-FT4XQ (CN2-11)
12	VOLQ	DIF-VOLXQ (CN2-12)
13	F*SQ	DIF-F*SQX (CN2-13)
14	INVQ	DIF-INVXQ (CN2-14)
15	A*SQ	DIF-A*SQX (CN2-15)
16	FAQ	DIF-FAQXQ (CN2-16)
17	ASQ	DIF-ASQX (CN2-17)
18	FSQ	DIF-FSQX (CN2-18)
19	AAQ	DIF-AAQXQ (CN2-19)
20	FRQ	DIF-FRQXQ (CN2-20)
21	ADQ	DIF-ADXQ (CN2-21)
22	FTQ	DIF-FTQXQ (CN2-22)
23	ARQ	DIF-ARXQ (CN2-23)
24	LPFD	DIF-LPFXQ (CN2-24)
25	EDPD	DIF-EDPDQ (CN2-25)
26	-	-

MOX

C5			
Pin No.	Pin Name	Wire Color	Destination
1	PWQ		MX1-PW (C2-1)
2	FT4Q		MX1-FT4 (C2-2)
3	FT1Q		MX1-FT1 (C2-3)
4	FT3Q		MX1-FT3 (C2-4)
5	FT2Q		MX1-FT2 (C2-5)
6			
7	SINQ		MX1-SIN (C2-7)
8	OMDD		MX1-OMD (C2-8)
9	+10		MX1+10 (C2-9)
10	-5		MX1-5 (C2-10)
11	SQUQ		MX1-SQU (C2-11)
12	SAWQ		MX1-SAW (C2-12)
13	HPFX		MX1-HPF (C2-13)
14	BPFX		MX1-BPF (C2-14)
15	WNDS		MX1-WNS (C2-15)
16			
17			
18			
19	FRQX		MX1-FRQ (C2-19)
20	FMDQ		MX1-FMD (C2-20)
21	BRI		MX1-BRI (C2-21)
22	RESQ		MX1-RES (C2-22)

C6			
Pin No.	Pin Name	Wire Color	Destination
1	EDPX		MX1-EDP (C3-1)
2	LPFQ		MX1-LPF (C3-2)
3	VOLQ		MX1-VOL (C3-3)
4	INVQ		MX1-INV (C3-4)
5	FAQ		MX1-FA (C3-5)
6	FDQ		MX1-FD (C3-6)
7	FRQ		MX1-FR (C3-7)
8	FSQ		MX1-FS (C3-8)
9	-15		MX1-15 (C3-9)
10	-15		MX1-15 (C3-10)
11	AE		MX1-GND (C3-11)
12	AE		MX1-GND (C3-12)
13	AE		MX1-GND (C3-13)
14	+15		MX1+15 (C3-14)
15	+15		MX1+15 (C3-15)
16	FXSQ		MX1-FXS (C3-16)
17	AXSQ		MX1-AXS (C3-17)
18	ASQ		MX1-AS (C3-18)
19	AMDD		MX1-AMD (C3-19)
20	AAQ		MX1-AA (C3-20)
21	ADQ		MX1-AD (C3-21)
22	ARQ		MX1-AR (C3-22)

Connector No.		Destination	
MOX	C7	MX2	C2
	C8		C2
	C9	MX3	C2
	C10		C2
	C11	MX4	C2
	C12		C2
MOY	C13	MX5	C2
	C14	MX6	C2
	C15		C2
	C16		C2
	C5	MY1	C2
	C6		C2
	C7	MY2	C2
	C8		C2
	C9	MY3	C2
	C10		C2
	C11	MY4	C2
	C12		C2
	C13	MY5	C2
	C14		C2
	C15	MY6	C2
	C16		C2

MOY

C1

Pin No.	Pin Name	Wire Color	Destination
1	AMDD	PK	LF-AMYD (C8-1)
2	FMDQ	GY	LF-FMYD (C7-3)
3	WNDS	SB	LF-FMYD (C12-4)
4	OMDD	RE	LF-OMYD (C4-1)
5	PWD	GG	LF-PMYD (C5-3)

C2

Pin No.	Pin Name	Wire Color	Destination
1	BRI	SB	CPA-BRI (C7-1)
2	BRI	SB	MOX-BRI (C2-2)
3	AMDD	BR	LF-AMYD (C8-2)
4	FMDQ	BE	LF-FMYD (C7-1)
5	WNDS	WH	LF-FMYD (C12-5)
6	OMDD	VI	LF-OMYD (C4-2)
7	DTN	GG	CPA-DET (C4-1)
8	PWQ	PK	LF-PMYD (C5-1)

C3

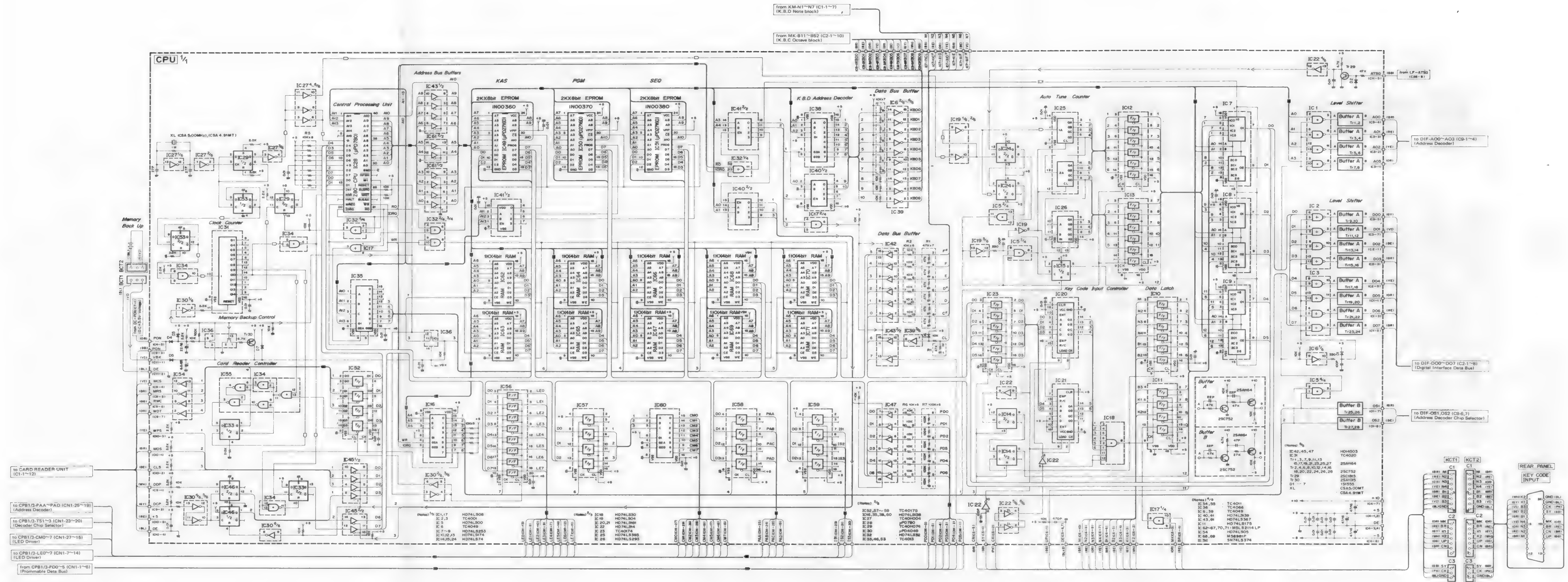
Pin No.	Pin Name	Wire Color	Destination
1	EK	BL	MY1-EK (C1-2)
2	EK	BL	MY2-EK (C1-2)
3	EK	BL	MY3-EK (C1-2)
4	EK	BL	MY4-EK (C1-2)
5	EK	BL	MY5-EK (C1-2)
6	EK	BL	MY6-EK (C1-2)
7	EK	BL	DIF-EK (C14-10)

CN1

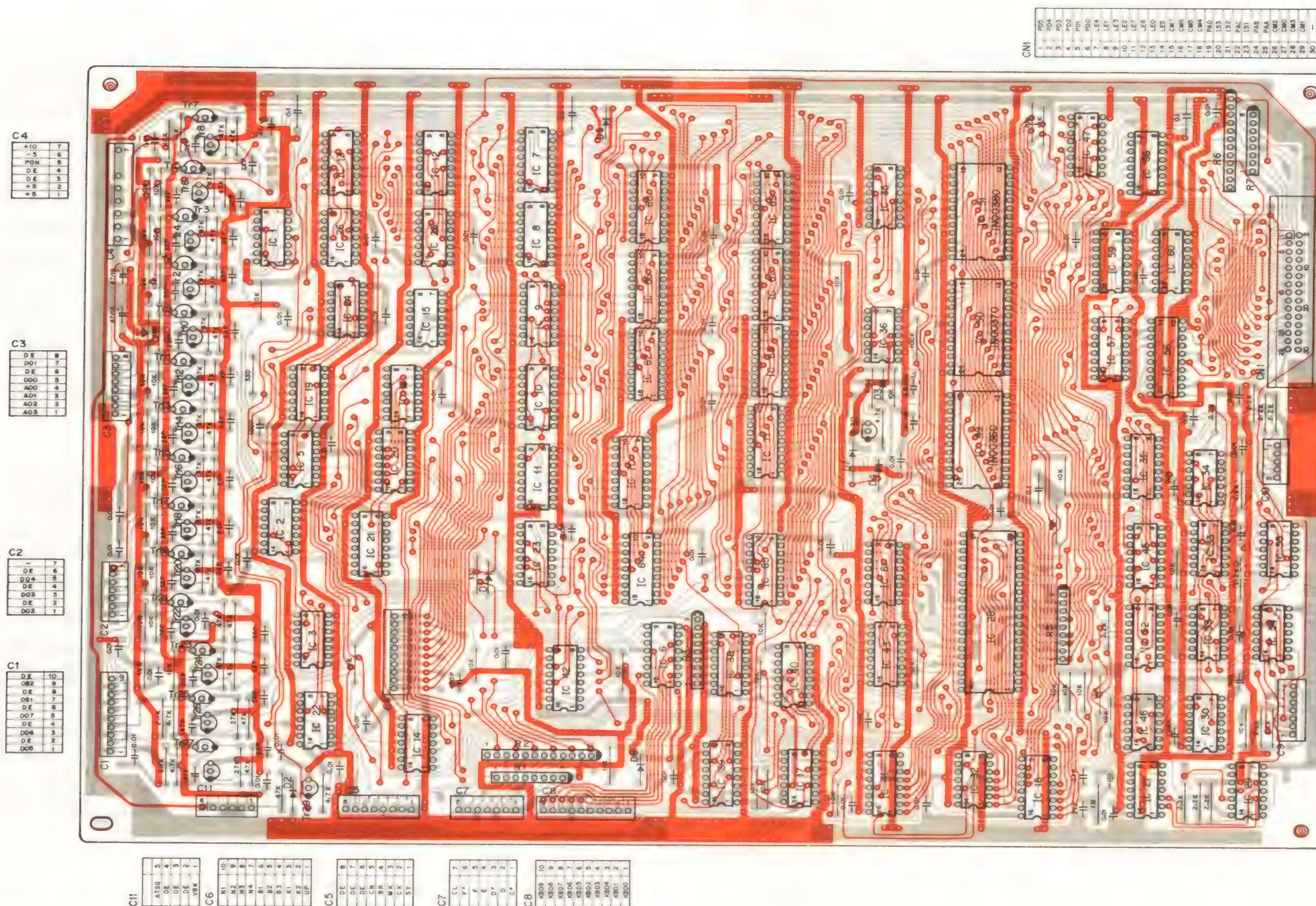
Pin No.	Pin Name	Destination
1	RESQ	DIF-RESYQ (CN3-1)
2	A*SQ	DIF-A*SYQ (CN3-2)
3	FRQX	DIF-FRQYQ (CN3-3)
4	ASQ	DIF-ASYQ (CN3-4)
5	BPFX	DIF-BPFXQ (CN3-5)
6	F*SQ	DIF-F*SYQ (CN3-6)
7	HPFX	DIF-HPFYQ (CN3-7)
8	FSQ	DIF-FSYQ (CN3-8)
9	SAWQ	DIF-SAWYQ (CN3-9)
10	FRQ	DIF-FRYQ (CN3-10)
11	SQUQ	DIF-SQUYQ (CN3-11)
12	ARQ	DIF-ARYQ (CN3-12)
13	FT3Q	DIF-FT3YQ (CN3-13)
14	FDQ	DIF-FDYQ (CN3-14)
15	FT4Q	DIF-FT4YQ (CN3-15)
16	FAQ	DIF-FAYQ (CN3-16)
17	SINQ	DIF-SINYQ (CN3-17)
18	INVQ	DIF-INVYQ (CN3-18)
19	AAQ	DIF-AAYQ (CN3-19)
20	FT1Q	DIF-FT1YQ (CN3-20)
21	ADQ	DIF-ADYQ (CN3-21)
22	FT2Q	DIF-FT2YQ (CN3-22)
23	EDPX	DIF-EDPYQ (CN3-23)
24	VOLQ	DIF-VOLYQ (CN3-24)
25	LPFQ	DIF-LPFYQ (CN3-25)
26		-

CN2

Pin No.	Pin Name	Destination
1	SQUQ	DIF-SQUYD (CN4-1)
2	SAWD	DIF-SAWYD (CN4-2)
3	SIND	DIF-SINDYD (CN4-3)
4	HPFD	DIF-HPFYD (CN4-4)
5	FTD1	DIF-FT1YD (CN4-5)
6	BPFD	DIF-BPFYD (CN4-6)
7	FTD2	DIF-FT2YD (CN4-7)
8	FRQD	DIF-FROYD (CN4-8)
9	FTD3	DIF-FT3YD (CN4-9)
10	RESD	DIF-RESYD (CN4-10)
11	FT4D	DIF-FT4YD (CN4-11)
12	VOLD	DIF-VOLDYD (CN4-12)
13	F*SYD	DIF-F*SYD (CN4-13)
14	INVD	DIF-INVDYD (CN4-14)
15	A*SYD	DIF-A*SYD (CN4-15)
16	FAQD	DIF-FAYDYD (CN4-16)
17	ASD	DIF-ASYDYD (CN4-17)
18	FSD	DIF-FSYDYD (CN4-18)
19	AAD	DIF-AAYDYD (CN4-19)
20	FRD	DIF-FRYDYD (CN4-20)
21	ADD	DIF-ADYDYD (CN4-21)
22	FDD	DIF-FDYDYD (CN4-22)
23	ARD	DIF-ARYDYD (CN4-23)
24	LPFD	DIF-LPFYDYD (CN4-24)
25	EDPD	DIF-EDPYDYD (CN4-25)
26		-



CPU Circuit Board & Wiring



C1

Pin No.	Pin Name	Wire Color	Destination
1	DO5	OR	DIF-DO5 (C2-3)
2	DE	-	-
3	DO6	RE	DIF-DO6 (C2-2)
4	DE	-	-
5	DO7	BR	DIF-DO7 (C2-1)
6	DE	-	-
7	OS1	GR	DIF-OS1 (C9-6)
8	DE	-	-
9	OS2	BE	DIF-OS2 (C9-7)
10	DE	-	-

C2

Pin No.	Pin Name	Wire Color	Destination
1	DO2	BE	DIF-DO2 (C2-6)
2	DE	-	-
3	DO3	GR	DIF-DO3 (C2-5)
4	DE	-	-
5	DO4	YE	DIF-DO4 (C2-4)
6	DE	-	-

C3

Pin No.	Pin Name	Wire Color	Destination
1	A03	OR	DIF-A03 (C9-3)
2	A02	YE	DIF-A02 (C9-4)
3	A01	RE	DIF-A01 (C9-2)
4	A00	BR	DIF-A00 (C9-1)
5	DO0	GY	DIF-DO0 (C2-8)
6	DE	-	-
7	DO1	VI	DIF-DO1 (C2-7)
8	DE	-	-

C4

Pin No.	Pin Name	Wire Color	Destination
1	+5	RE	DC+5 (C5-4)
2	+5	RE	DC+5 (C6-4)
3	DE	BL	DC-DE (C5-1)
4	DE	BL	DC-DE (C6-1)
5	PON	OR	DC-PON (C7-1)
6	5	BE	DC-5 (C7-3)
7	+10	GR	DC+10 (C7-2)

C5

Pin No.	Pin Name	Wire Color	Destination
1	SY	SB	KCT1-SY (C3-1)
2	CK	PK	KCT1-CK (C3-2)
3	MK	OR	KCT1-MK (C2-1)
4	BR	RE	KCT1-BR (C2-2)
5	CN	BR	KCT1-CN (C2-6)
6	DE	BL	KCT1-GND (C3-3)
7	DE	BL	KCT1-GND (C1-8)
8	DE	-	-

C6

Pin No.	Pin Name	Wire Color	Destination
1	UP	GG	KCT1-UP (C2-5)
2	K2	WH	KCT1-K2 (C2-4)
3	K1	GY	KCT1-K1 (C2-3)
4	B3	VI	KCT1-B3 (C1-7)
5	B2	BE	KCT1-B2 (C1-6)
6	B1	GR	KCT1-B1 (C1-5)
7	N4	YE	KCT1-N4 (C1-4)
8	N3	OR	KCT1-N3 (C1-3)
9	N2	RE	KCT1-N2 (C1-2)
10	N1	BR	KCT1-N1 (C1-1)

C7

Pin No.	Pin Name	Wire Color	Destination
1	C=	RE	MK-N2 (C1-2)
2	D	OR	MK-N3 (C1-3)
3	D=	YE	MK-N4 (C1-4)
4	E	GR	MK-N5 (C1-5)
5	F	BE	MK-N6 (C1-6)
6	V1	MK	N7 (C1-7)
7	CL	BR	MK-N1 (C1-1)

C8

Pin No.	Pin Name	Wire Color	Destination
1	KBD0	BR	MK-B11 (C2-1)
2	KBD1	RE	MK-B12 (C2-2)
3	KBD4	GR	MK-B31 (C2-5)
4	KBD3	YE	MK-B22 (C2-4)
5	KBD2	OR	MK-B21 (C2-3)
6	KBD5	BE	MK-B32 (C2-6)
7	KBD6	VI	MK-B41 (C2-7)
8	KBD7	GY	MK-B42 (C2-8)
9	KBD8	WH	MK-B51 (C2-9)
10	KBD9	GG	MK-B52 (C2-10)

C9

Pin No.	Pin Name	Wire Color	Destination
1	DDP	WH	CR-DDP (C1-10)
2	DCP	GY	CR-DCP (C1-9)
3	PON	SB	CR-PON (C1-2)
4	MCS	VI	CR-MCS (C1-8)
5	MRS	BR	CR-MRS (C1-1)
6	RWC	GG	CR-RWC (C1-3)
7	WDT	OR	CR-WDT (C1-4)

C10

Pin No.	Pin Name	Wire Color	Destination
1	MDS	GR	CR-MDS (C1-6)
2	CLS	BE	CR-CLS (C1-7)
3	WPS	YE	CR-WPS (C1-5)
4	DE	BL	CR-DE (C1-12)
5	+5	RE	CR+5 (C1-11)

C11

Pin No.	Pin Name	Wire Color	Destination
1	VBK	VI	BCT1-VBK (C1-1)
2	DE	BL	BCT1-DE (C1-3)
3	DE	-	-
4	DE	-	-
5	ATSG	S SB	LF-ATSG (C26-8)

CN1

Pin No.	Pin Name	Wire Color	Destination
1	PD5	-	CPB-PD5 (CN1-1)
2	PD4	-	CPB-PD4 (CN1-2)
3	PD3	-	CPB-PD3 (CN1-3)
4	PD2	-	CPB-PD2 (CN1-4)
5	PD1	-	CPB-PD1 (CN1-5)
6	PDO	-	CPB-PDO (CN1-6)
7	LE4	-	CPB-LE4 (CN1-7)
8	LE1	-	CPB-LE1 (CN1-8)
9	LE3	-	CPB-LE3 (CN1-9)
10	LE2	-	CPB-LE2 (CN1-10)
11	LE7	-	CPB-LE7 (CN1-11)
12	LE6	-	CPB-LE6 (CN1-12)
13	LE0	-	CPB-LE0 (CN1-13)
14	LE5	-	CPB-LE5 (CN1-14)
15	CM7	-	CPB-CM7 (CN1-15)
16	CM6	-	CPB-CM6 (CN1-16)
17	CM5	-	CPB-CM5 (CN1-17)
18	CM4	-	CPB-CM4 (CN1-18)
19	PAD	-	CPB-PAD (CN1-19)
20	IS3	-	CPB-IS3 (CN1-20)
21	IS2	-	CPB-IS2 (CN1-21)
22	PAC	-	CPB-PAC (CN1-22)
23	IS1	-	CPB-IS1 (CN1-23)
24	PAB	-	CPB-PAB (CN1-24)
25	PAA	-	CPB-PAA (CN1-25)
26	CM2	-	CPB-CM2 (CN1-26)
27	CM0	-	CPB-CM0 (CN1-27)
28	CM3	-	CPB-CM3 (CN1-28)
29	CM1	-	CPB-CM1 (CN1-29)
30	-	-	-

KCT1

Pin No.	Pin Name	Wire Color	Destination
1	N1	BR	CPU-N1 (C6-10)
2	N2	RE	CPU-N2 (C6-9)
3	N3	OR	CPU-N3 (C6-8)
4	N4	YE	CPU-N4 (C6-7)
5	B1	GR	CPU-B1 (C6-6)
6	B2	BE	CPU-B2 (C6-5)
7	B3	VI	CPU-B3 (C6-4)
8	GND	BL	CPU-DE (C5-7)

C1

Pin No.	Pin Name	Wire Color	Destination
1	MK	OR	CPU-MK (C5-3)
2	BR	RE	CPU-BR (C5-4)
3	K1	GY	CPU-K1 (C6-3)
4	K2	WH	CPU-K2 (C6-2)
5	UP	GG	CPU-UP (C6-1)
6	CN	BR	CPU-CN (B5-5)
7	-	-	-

C3

Pin No.	Pin Name	Wire Color	Destination
1	SY	SB	CPU-SY (C5-1)
2	CK	PK	CPU-CK (C5-2)
3	GND	BL	CPU-DE (C5-6)

KCT2

Pin No.	Pin Name	Wire Color	Destination
1	N1	BR	KCI-N1 (CN1-9)
2	N2	RE	KCI-N2 (CN1-8)
3	N3	OR	KCI-N3 (CN1-7)
4	N4	YE	KCI-N4 (CN1-6)
5	B1	GR	KCI-B1 (CN1-5)
6	B2	BE	KCI-B2 (CN1-4)
7	B3	VI	KCI-B3 (CN1-3)
8	GND	BL	KCI-GND (CN1-23)

C2

Pin No.	Pin Name	Wire Color	Destination
1	MK	OR	KCI-MK (CN1-19)
2	BR	RE	KCI-BR (CN1-18)
3	K1	GY	KCI-K1 (CN1-2)
4	K2	WH	KCI-K2 (CN1-1)
5	UP	GG	KCI-UP (CN1-16)
6	CN	BR	KCI-CN (CN1-17)
7	-	-	-

C3

Pin No.	Pin Name	Wire Color	Destination
1	SY	SB	KCI-SY (CN1-21)
2	CK	PK	KCI-CK (CN1-22)
3	GND	BL	KCI-GND (CN1-24)

KCI

CN1

Pin No.	Pin Name	Wire Color	Destination
1	K2	WH	KCT2-K2 (C2-4)
2	K1	GY	KCT2-K1 (C2-3)
3	B3	VI	KCT2-B3 (C1-7)
4	B2	BE	KCT2-B2 (C1-6)
5	B1	GR	KCT2-B1 (C1-5)
6	N4	YE	KCT2-N4 (C1-4)
7	N3	OR	KCT2-N3 (C1-3)
8	N2	RE	KCT2-N2 (C1-2)
9	N1	BR	KCT2-N1 (C1-1)
10	-	-	-
11	-	-	-
12	-	-	-
13	-	-	-
14	-	-	-
15	-	-	-
16	UP	GG	KCT2-UP (C2-5)
17	CN	BR	KCT2-CN (C2-6)
18	BR	RE	KCT2-BR (C2-2)
19	MK	OR	KCT2-MK (C2-1)
20	-	-	-
21	SY	SB	KCT2-SY (C3-1)
22	CK	PK	KCT2-CK (C3-2)
23	GND	BL	KCT2-GND (C1-8)
24	GND	BL	KCT2-GND (C3-3)

KCT2

C1

Pin No.	Pin Name	Wire Color	Destination
1	VBK	VI	CPU-VBK (C11-1)
2	-	-	-
3	DE	BL	CPU-DE (C11-2)

Plug Housing

C1

Pin No.	Pin Name	Wire Color	Destination
1	VBK	VI	BAT-VBK (+)
2	-	-	-
3	DE	BL	BAT-DE (-)

Receptacle Housing

C1

Pin No.	Pin Name	Wire Color	Destination
1	VBK	VI	BCT2-VBK (C1-1)
2	DE	BL	BCT2-DE (C1-3)

- Notes)
- Circuit Board : LC86980 ③
 - Transistor
 - Tr1, 3, 5, 7, 9, 11 : 2SA1164
 - Tr2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28 : 2SC752
 - Tr29 : 2SC1815
 - Tr30 : 2SA1015
 - IC
 - IC1, 17 : HD74LS08
 - IC2, 3 : TC4001BP
 - IC5 : HD74LS00
 - IC6, 39 : TC4049BP
 - IC7, 8, 9 : HD74LS253P
 - IC10, 12, 13 : HD74LS174P
 - IC11 : HD74LS195P
 - IC14, 15, 24 : HD74LS74
 - IC18 : HD74LS30P
 - IC19 : HD74LS04
 - IC20, 21 : HD74LS161
 - IC22 : HD74LS14P
 - IC23 : TC40174BP
 - IC25 : HD74LS393P
 - IC26 : HD74LS295P
 - IC27 : TC40H004P
 - IC28 : μ PD780
 - IC29 : TC40HD74P
 - IC30 : TC4069C
 - IC32 : HD74LS32P
 - IC33, 46, 53 : TC4013BP
 - IC36 : TC4066BP
 - IC40, 41 : HD74LS139P
 - IC16, 35, 38, 60 : HD74LS138
 - IC43, 61 : HD74LS367P
 - IC49, 50, 51 : μ PC2716D
 - IC31 : TC4020BP
 - IC34, 35 : TC4011BP
 - IC42, 45, 47 : HD14503BP
 - IC52, 57 ~ 59 : TC40175BP
 - IC54 : HD74LS05P
 - IC56 : SN74LS374
 - IC62 ~ 67, 70, 71 : M5L2114LP
 - IC68, 69 : M58981P
 - Diode
 - D1 ~ 7 : 1S1555
 - Capacitor
 - () marked : Ceramic Capacitor

View from the component side of the circuit board.

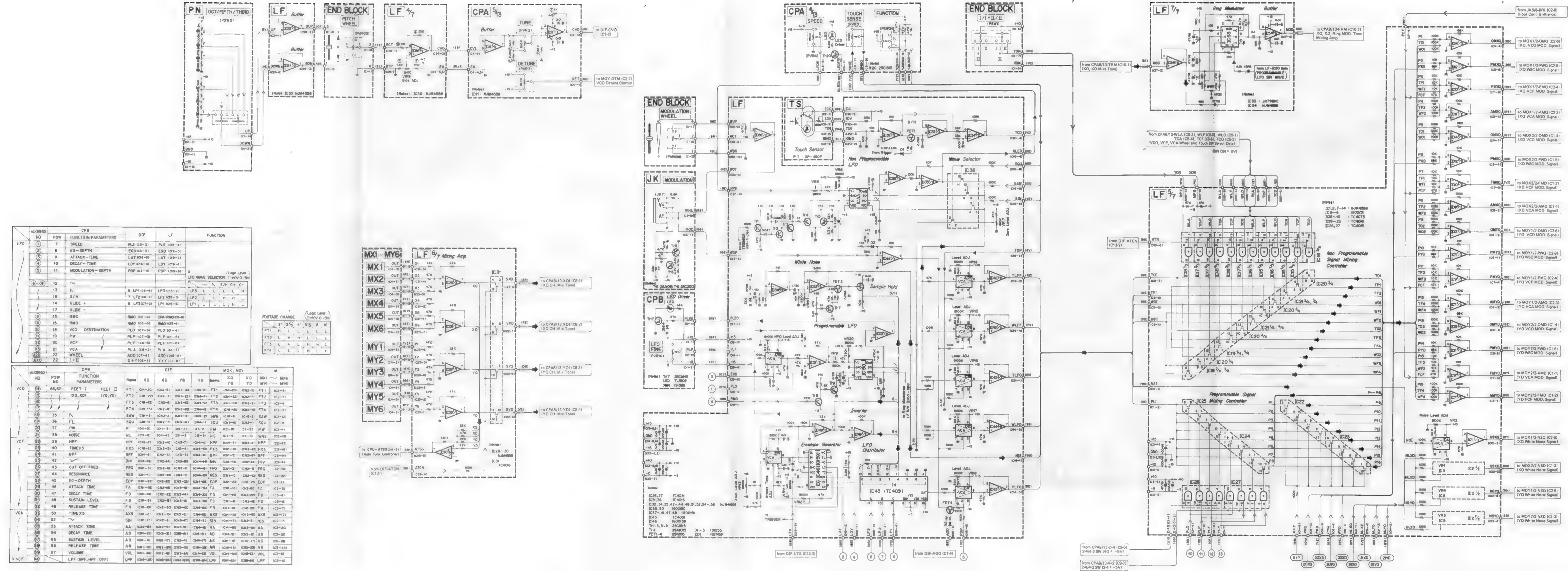
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- DIF Circuit Board & Wiring 45

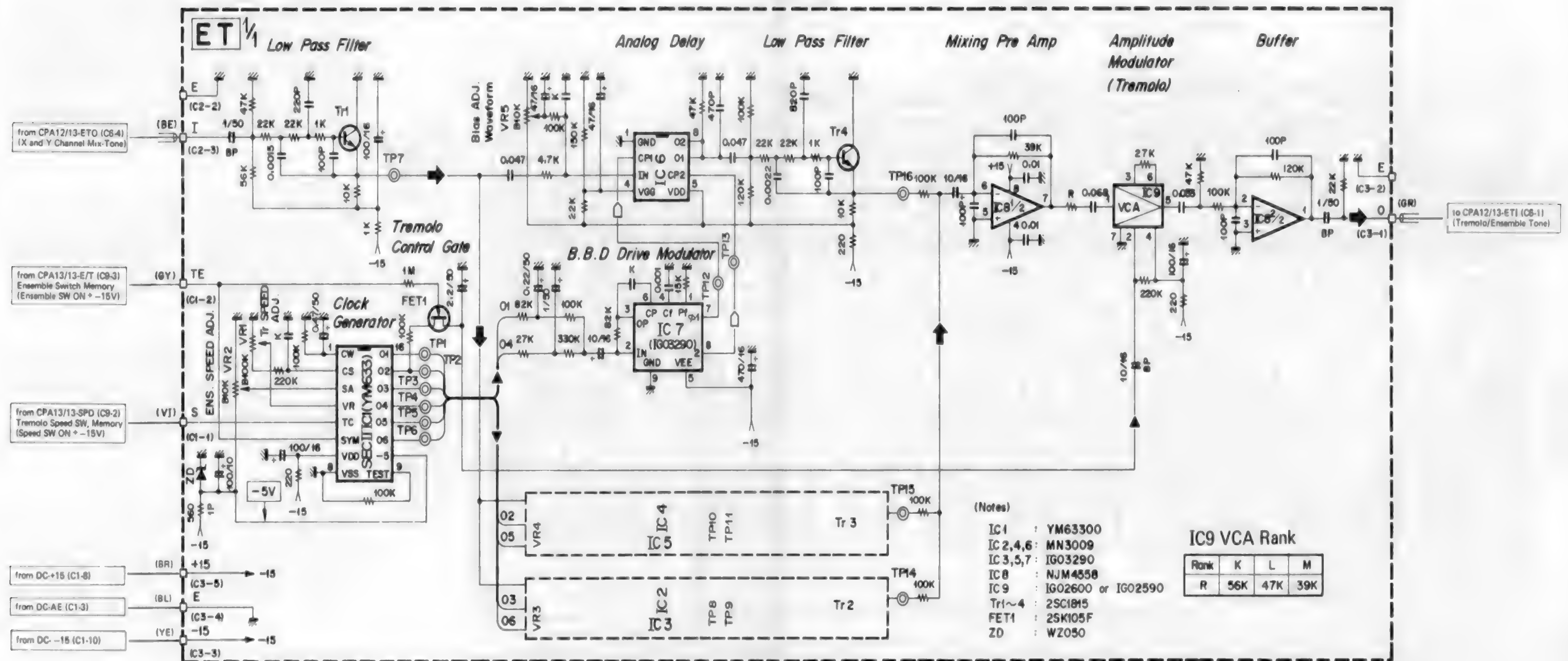
LF Circuit Diagram



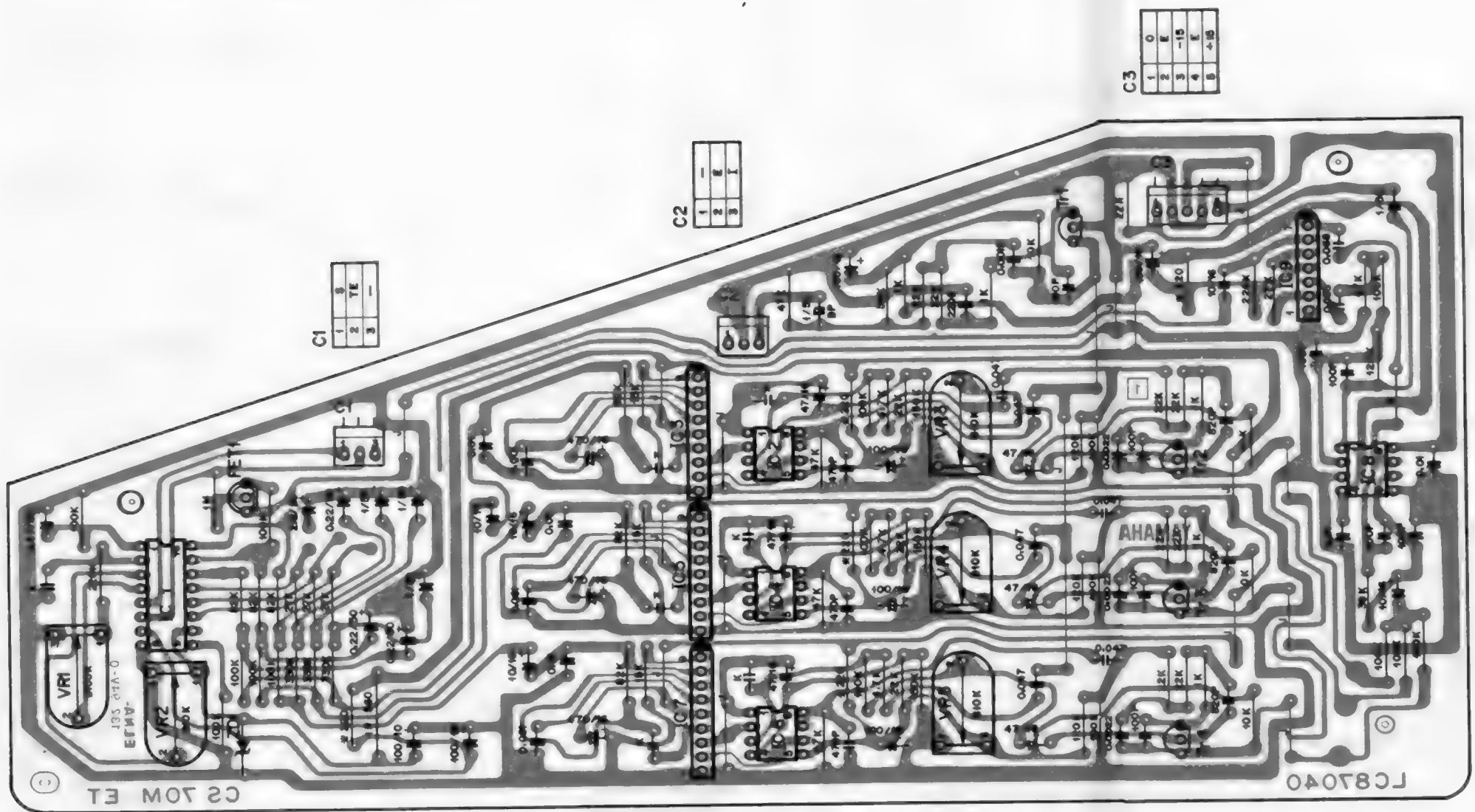
51

- LF Circuit Board & Wiring 52

ET Circuit Diagram



ET Circuit Board & Wiring



- Notes)
- 1. Circuit Board : LC87040 □
 - 2. Transistor
Tr1 ~ 4 : 2SC1815
 - 3. FET
FET1 : 2SK105F
 - 4. IC
IC1 : YM63300 (SECII)
IC2, 4, 6 : MN3009 (BBD)
IC3, 5, 7 : iG03290 (BBD Driver)
IC8 : NJM4558DV (OP-Amp)
IC9 : iG02600 (VCA)
iG02590 (VCA)
 - 5. Zener Diode
ZD1 : WZ050
 - 6. Capacitor
K marked : 1000P Ceramic Capacitor
() marked : Ceramic Capacitor
 - 7. IC9 (iG02600, iG02590)

Rank	K	L	M
R	56K	47K	39K

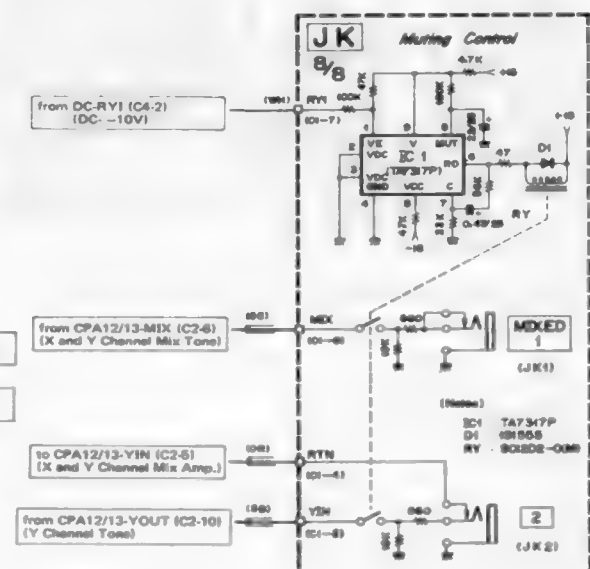
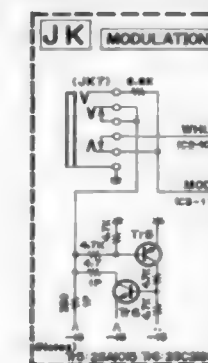
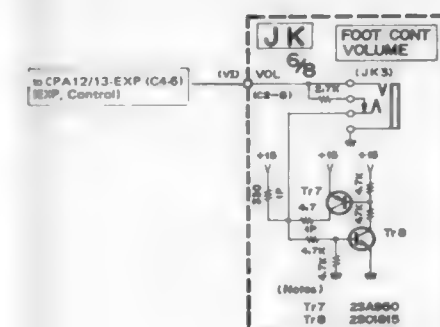
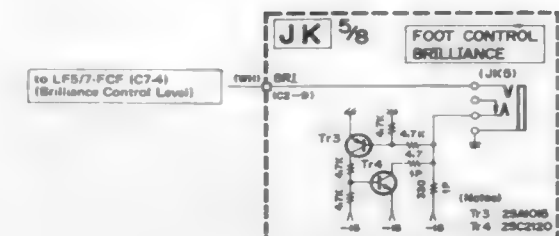
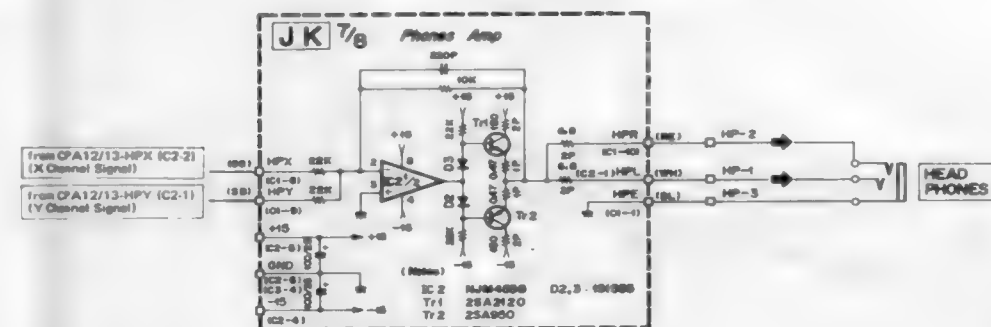
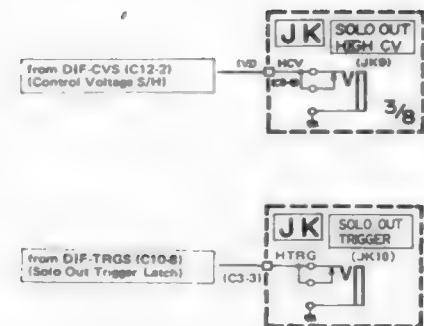
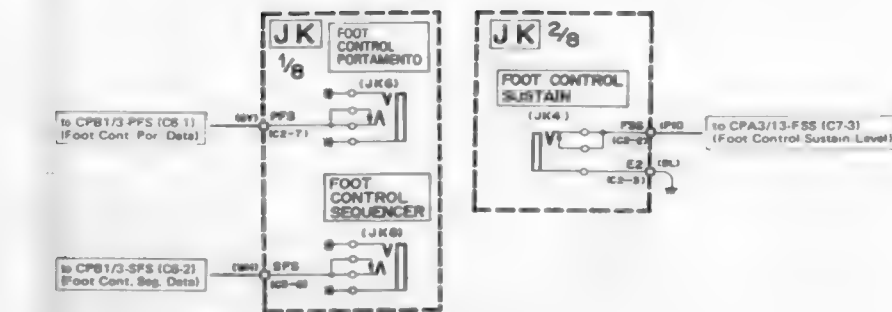
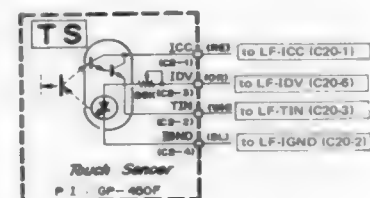
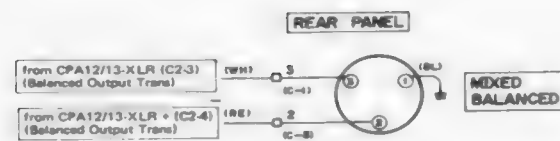
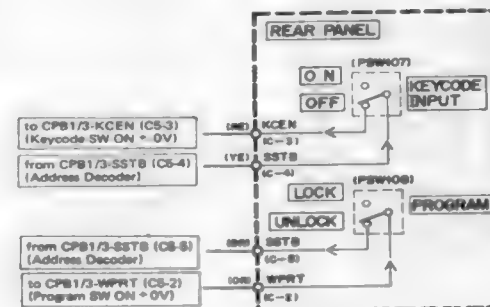
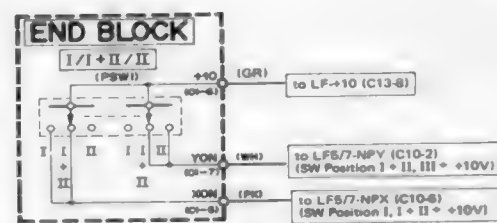
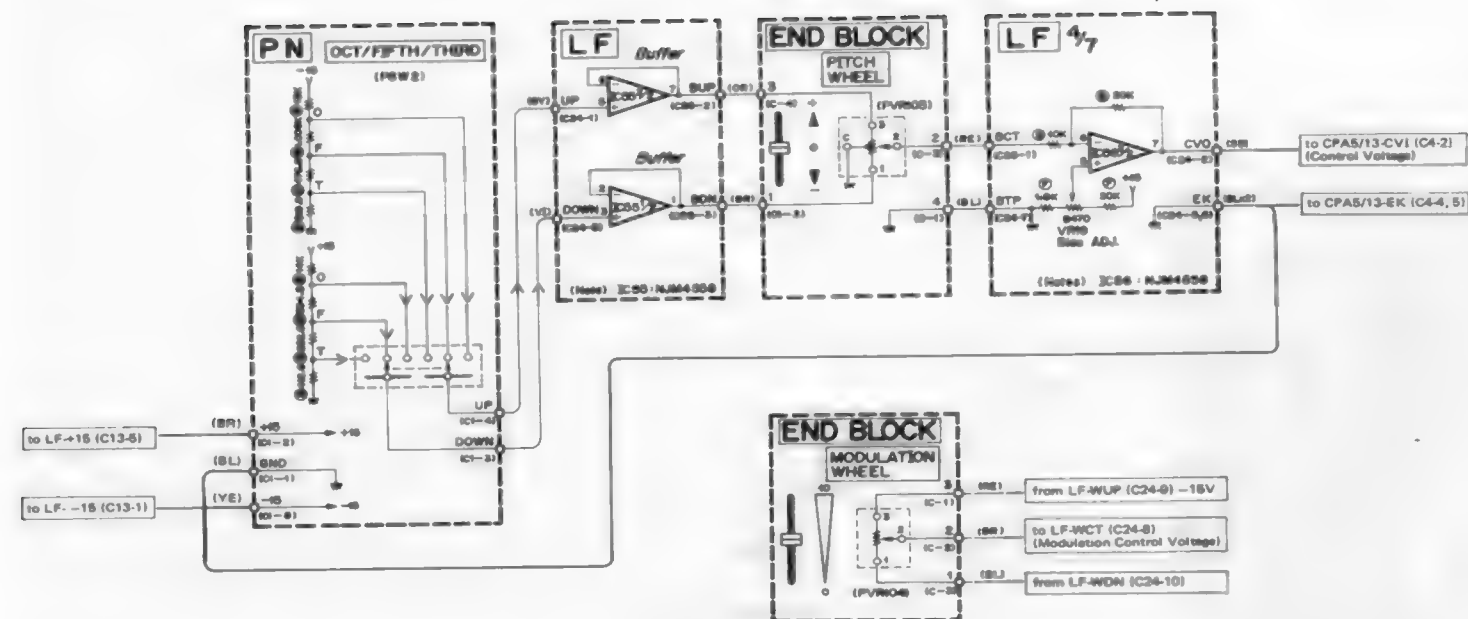
View from the component side of the circuit board.

C1			
Pin No.	Pin Name	Wire Color	Destination
1	S	VI	CPA-SPD (C9-2)
2	TE	GV	CPA-E/T (C9-3)
3	-	-	-

C2			
Pin No.	Pin Name	Wire Color	Destination
1	-	-	-
2	E	-	-
3	I	SBE	CPA-ETO (C5-4)

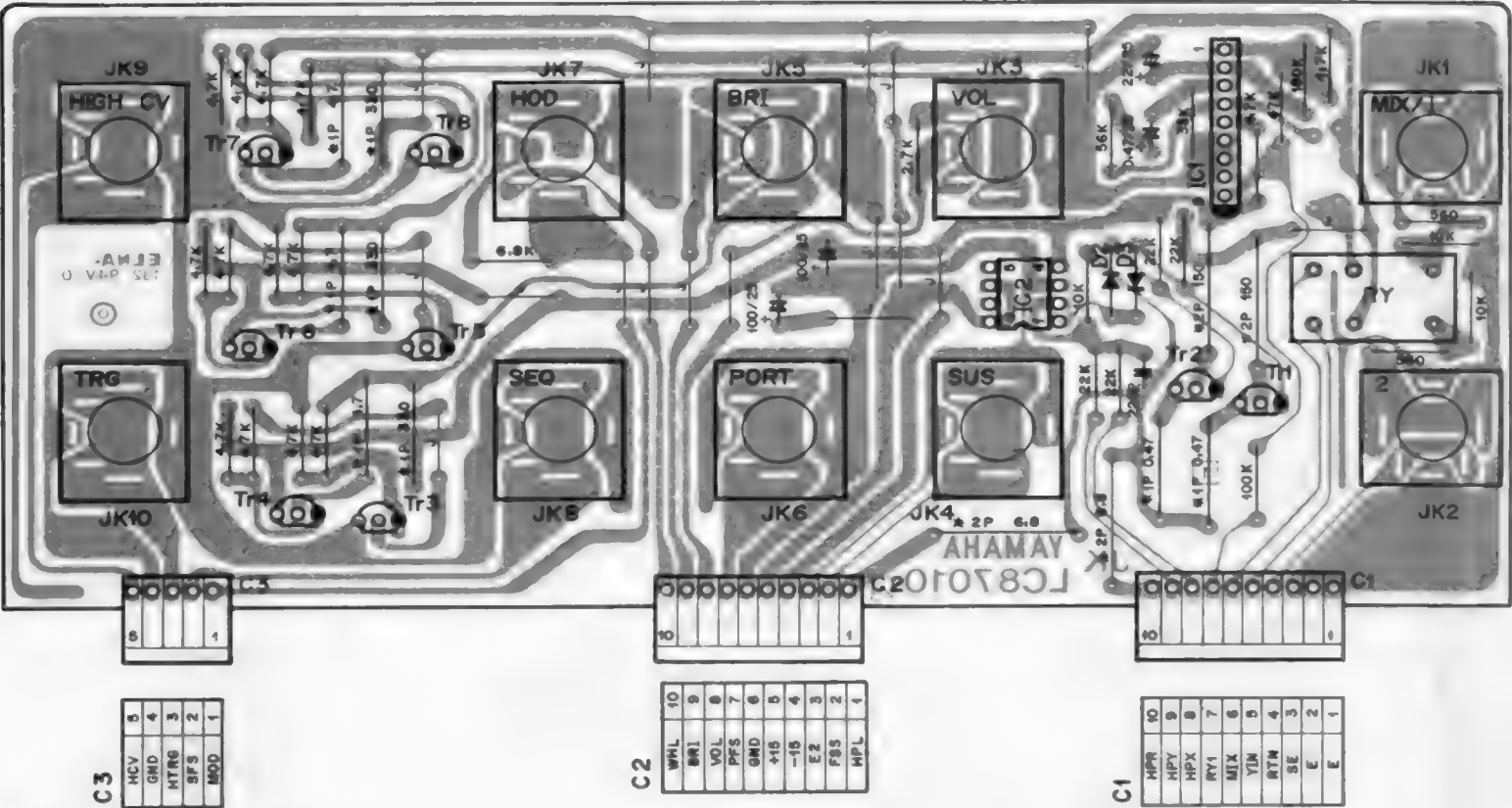
C3			
Pin No.	Pin Name	Wire Color	Destination
1	O	SGR	CPA-ET1 (C8-1)
2	E	SGR S	-
3	-15	YE	DC-15 (C1-10)
4	E	BL	DC-AE (C1-3)
5	+15	BR	DC-15 (C1-8)

JK, TS, PN Circuit Diagram



JK,TS,PN Circuit Board & Wiring

JK



View from the component side of the circuit board.

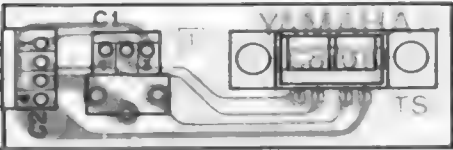
Pin No	Pin Name	Wire Color	Destination
1	E	BL	HP-3
2	E	BL	CPA-GND (C2-6)
3	SE	S-OR-S	
4	RTN	S-OR	CPA-YIN (C2-5)
5	YIN	S-SB	CPA-YOUT (C2-10)
6	MIX	S-GG	CPA-MIX (C2-6)
7	RY1	WH	DC-RY1 (C4-2)
8	HPX	GG	CPA-HPX (C2-2)
9	HPY	SB	CPA-HPY (C2-1)
10	HPR	RE	HP-2

Pin No	Pin Name	Wire Color	Destination
1	HPL	WH	HP-1
2	FSS	PK	CPA-FSS (C7-3)
3	E2	BL	LF-GND (C13-3)
4	-15	YE	DC-15 (C4-11)
5	+15	BR	DC-15 (C4-9)
6	GND	BL	DC-AE (C4-4)
7	PPS	GY	CPB-PPS (C6-1)
8	VOL	VI	CPA-EXP (C4-6)
9	BRI	WH	LF-FCF (C7-4)
10	WHL	RE	LF-WOT (C24-4)

- Notes)
- Circuit Board : LC87010 1/3
 - IC
IC1 : TA7317P
IC2 : NJM4558DV (OP-Amp)
 - Transistor
Tr1, 4, 6 : 2SC2120
Tr2, 7 : 2SA950
Tr3, 5 : 2SA1015
Tr8 : 2SC1815
 - Diode
D1 ~ 3 : 1S1555
 - Resistor
* marked : Metal Oxide Film Resistor
Mount as show below.



TS



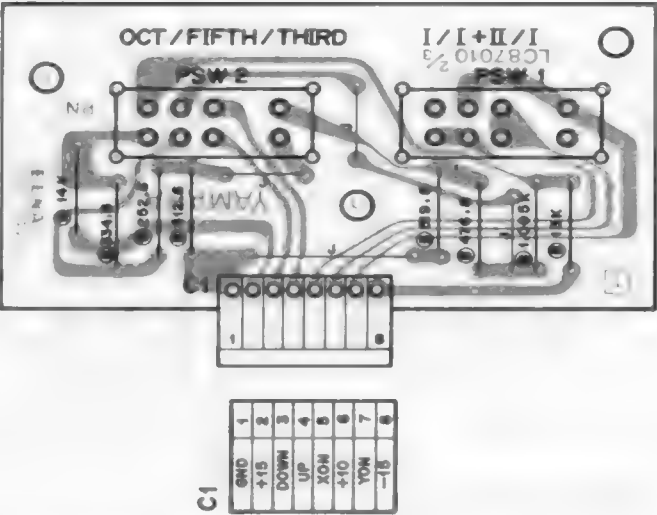
Note)
1. Circuit Board : LC87010 2/3

View from the printed pattern side of the circuit board.

Pin No	Pin Name	Wire Color	Destination
1	CP1	-	-
2	CP2	-	-
3	CP3	-	-

Pin No	Pin Name	Wire Color	Destination
1	ICC	RE	LF-ICC (C20-1)
2	TIN	WH	LF-TIN (C20-3)
3	IDV	OR	LF-IDV (C20-6)
4	IGND	BL	LF-IGND (C20-2)

PN

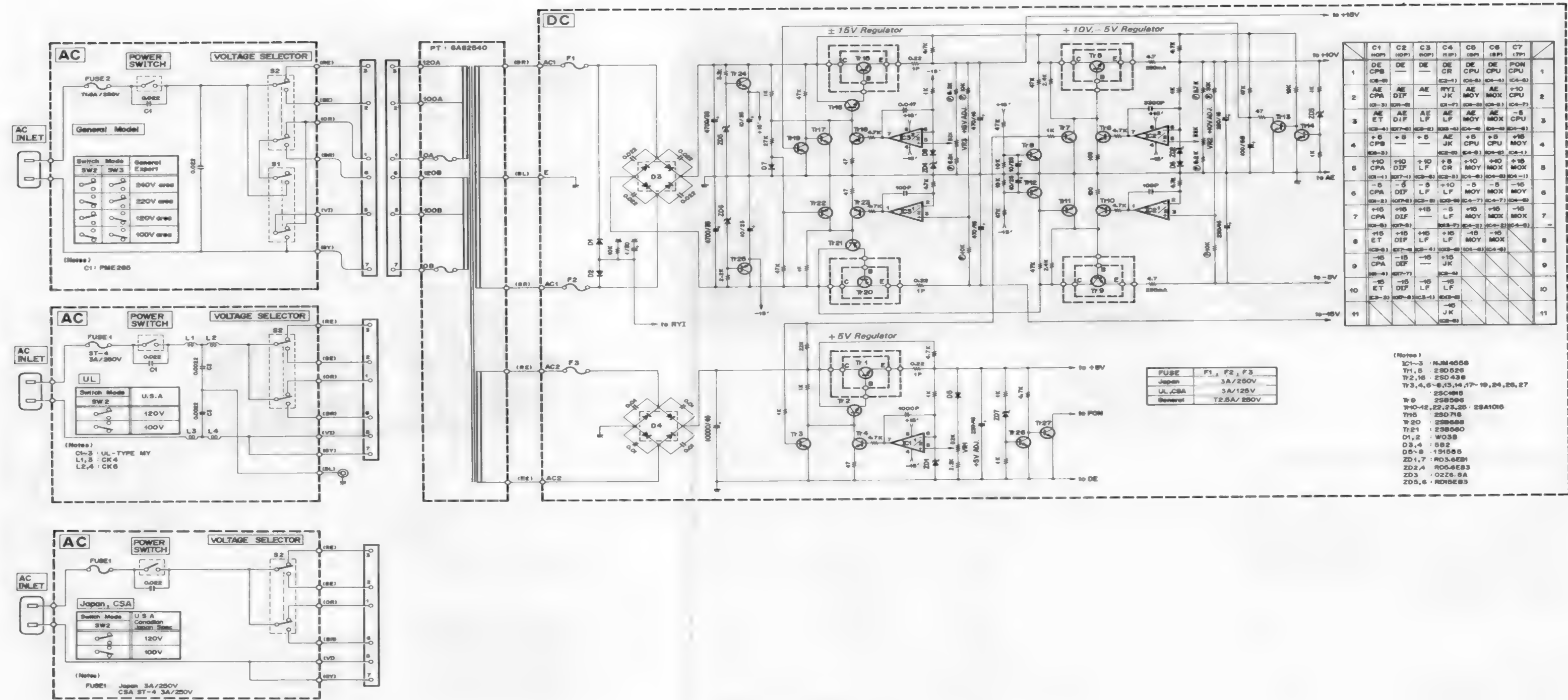


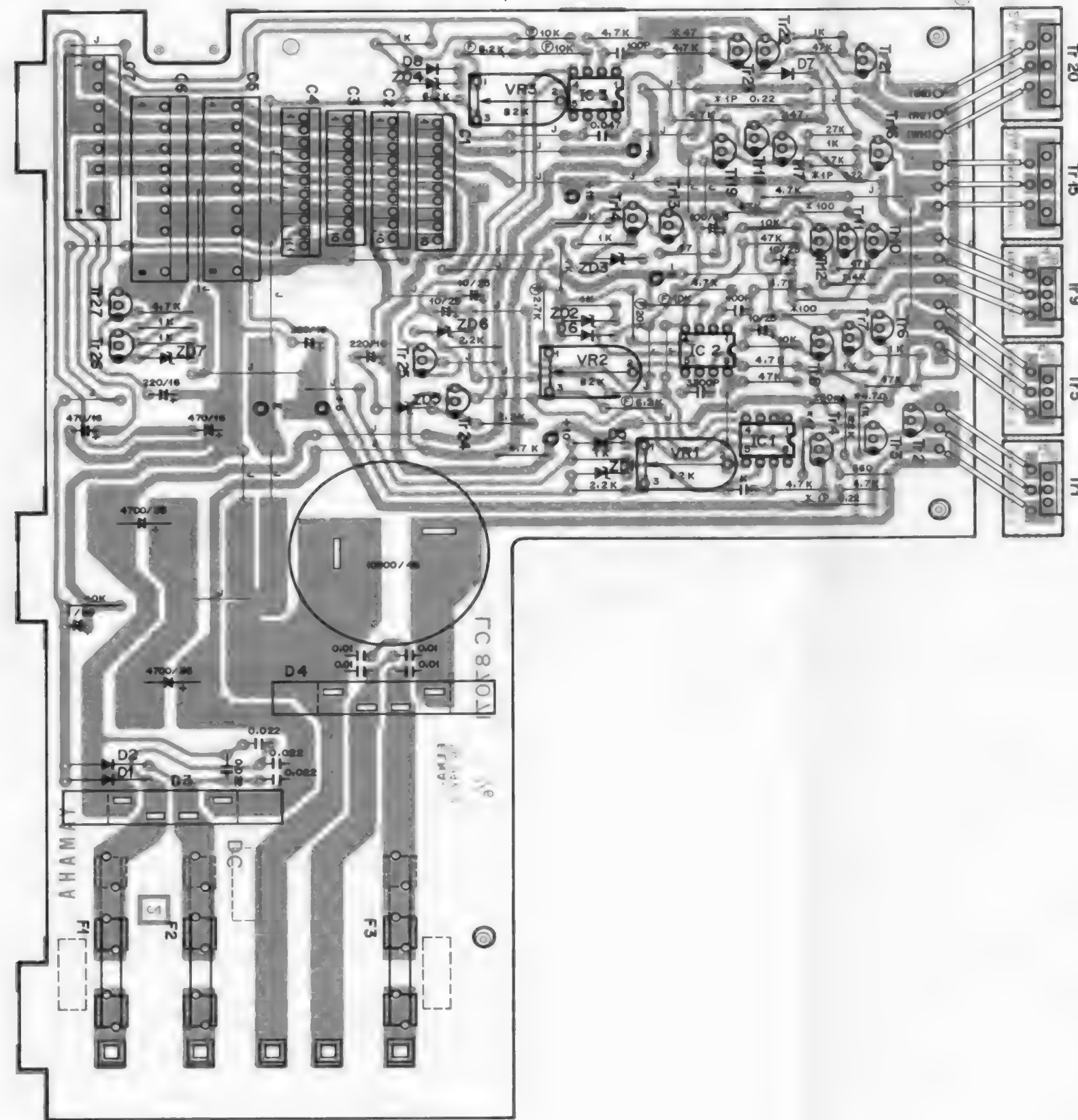
- Notes)
- Circuit Board : LC87010 3/3
 - Resistor
B marked : Metal Film Resistor ($\pm 0.1\%$)
 - SW
PSW1, 2 : 2 way 3 contact

View from the component side of the circuit board.

Pin No	Pin Name	Wire Color	Destination
1	GND	BL	LF-EK (C24-5)
2	+15	BR	LF-+15 (C13-5)
3	DOWN	VI	LF-DOWN (C24-3)
4	UP	GY	LF-UP (C24-1)
5	XON	PK	LF-NPX (C10-8)
6	+10	GR	LF-+10 (C13-8)
7	YON	WH	LF-NPY (C10-2)
8	-15	YE	LF-15 (C13-1)

DC Circuit Diagram





Pin No	Pin Name	Wire Color	Destination
1	DE	BL	CPB-DE (C8-5)
2	AE	BL	CPA-GND (C1-3)
3	AE	BL	ET-E (C3-4)
4	+5	RE	CPB-+5 (C8-3)
5	+10	GR	CPA-+10 (C1-1)
6	5	BE	CPA-5 (C1-2)
7	+15	BR	CPA-+15 (C1-5)
8	+15	BR	ET-+15 (C3-5)
9	-15	VE	CPA- -15 (C1-4)
10	-15	VE	ET- -15 (C3-3)

Pin No.	Pin Name	Wire Color	Destination
1	DE	—	—
2	AE	BL	DIF-AE (C17-5)
3	AE	BL	DIF-AE (C17-8)
4	+5	—	—
5	+10	GR	DIF-+10 (C17-1)
6	-5	BF	DIF- -5 (C17-2)
7	+15	BE	DIF-+15 (C17-3)
8	+15	BR	DIF-+15 (C17-4)
9	-15	YE	DIF- -15 (C17-7)
10	-15	YE	DIF- -15 (C17-8)

Pin No.	Pin Name	Wire Color	Destination
1	DE	-	-
2	AE	-	-
3	AE	BL	LP-GND (C3-2)
4	+5	-	-
5	+10	GR	LP+10 (C3-6)
6	-6	BE	LP-6 (C3-6)
7	+15	-	-
8	+15	BR	LP+15 (C3-6)
9	15	-	-
10	-15	YE	LP-15 (C3-11)

Pin No.	Pin Name	Wire Color	Destination
1	DE	BL	CR-DE (C2-1)
2	RY1	WH	JK-RY1 (C1-7)
3	AE	BL	LF-GND (C13-4)
4	AE	BL	JK-GND (C2-6)
5	+5	RE	CR-+5 (C2-3)
6	+10	GR	LF-+10 (C13-9)
7	-5	BE	LF--5 (C13-7)
8	+15	BR	LF-+15 (C13-6)
9	+15	BR	JK-+15 (C2-5)
10	-15	YE	LF--15 (C13-2)
11	-15	YE	JK--15 (C2-4)

C5			
Pin No	Pin Name	Wire Color	Destination
1	DE	BL	CPU-DE (C4-3)
2	AE	BL	MOY-AE (C4-3)
3	AE	BL	MOY-AE (C4-4)
4	+5	GR	CPU-+5 (C4-1)
5	+10	RE	MOY +10 (C4-8)
6	-5	BR	MOY- -5 (C4-7)
7	+15	BE	MOY +15 (C4-2)
8	-15	YE	MOY -15 (C4-6)

Pin No.	Pin Name	Wire Color	Destination
1	DE	BL	CPU-DE (C4-4)
2	AE	BL	MOX-AE (C4-3)
3	AE	BL	MOX-AE (C4-4)
4	+5	RE	CPU-+5 (C4-2)
5	+10	GR	MOX-+10 (C4-8)
6	-5	SE	MOX- -5 (C4-7)
7	+15	BR	MOX-+15 (C4-2)
8	-15	YE	MOX- -15 (C4-6)

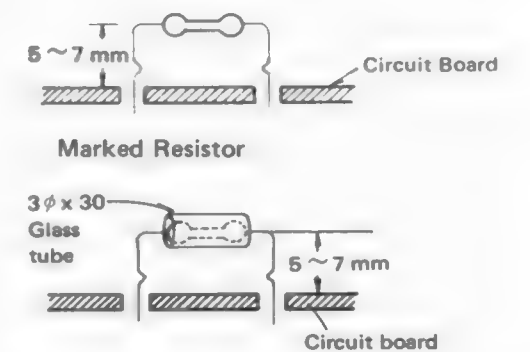
C7

Pin No.	Pin Name	Wire Color	Destination
1	PON	OR	CPU-PON (C4-5)
2	+10	GR	CPU-+10 (C4-7)
3	-5	BE	CPU -5 (C4-6)
4	+15	BR	MOY +15 (C4-1)
5	+15	BR	MOX +15 (C4-1)
6	-15	YE	MOY -15 (C4-5)
7	-15	YE	MOX -15 (C4-5)

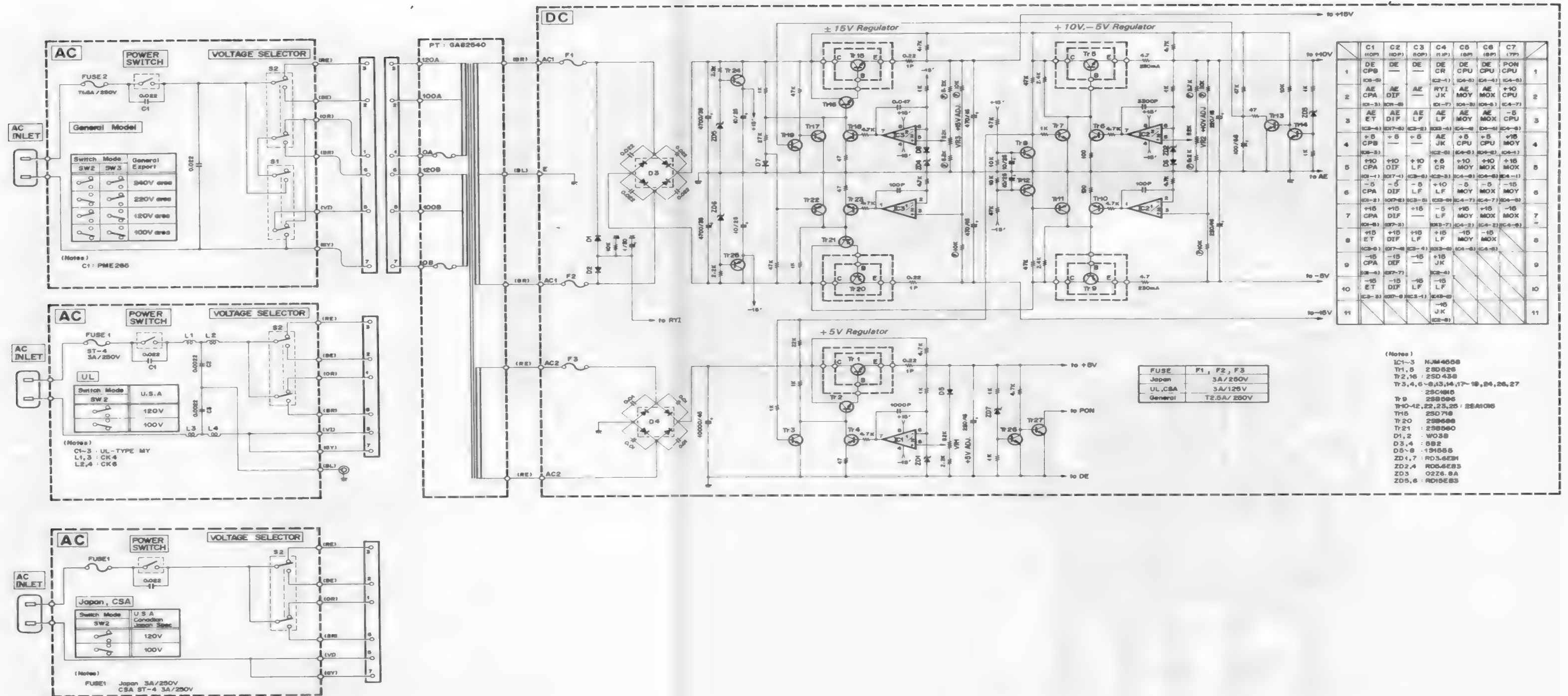
- Notes)
1. Circuit Board : LC87071 ②
 2. Transistor
Tr1, 5 : 2SD526 (O, Y)
Tr2, 16 : 2SD438
Tr3, 4, 6 ~ 8, 13, 14
17 ~ 19, 24, 26, 27 : 2SC1815 (O, Y)
Tr9 : 2SB596 (O, Y)
Tr10 ~ 12, 22, 23, 25 : 2SA1015 (O, Y)
Tr15 : 2SD718 (R, O)
Tr20 : 2SB688 (R, O)
Tr21 : 2SB560
 3. IC
IC1 ~ 3 : NJM4558DV
 4. Diode
D1, 2 : W03B
D3, 4 : 15B2
D5 ~ 8 : 1S1555
 5. Zener Diode
ZD1, 7 : RD3.6EB1
ZD2, 4 : RD5.6EB3
ZD3 : 02Z6.8A
ZD5, 6 : RD15EB3
 6. Capacitor
K marked : 1000P (Ceramic Capacitor)
 7. Fuse

Common Model	NA No.	F1, 2, 3
Japan	NA80828	▽ 3.15A, 250V
UL, CSA	NA80829	Ⓢ 3.15A, 125V
North European	NA80830	Ⓢ T2.5A, 250V

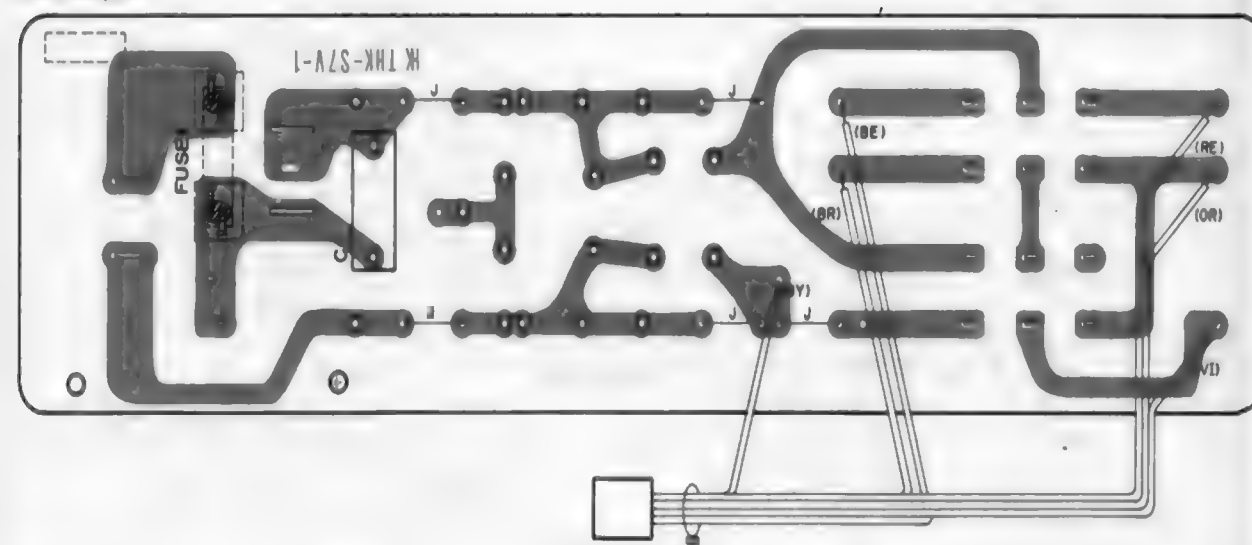
- 8. Resistor**
Ⓢ marked : Metal Film Resistor ($\pm 1\%$)
*** Marked Resistor**
 Mount as shown below



AC Circuit Diagram

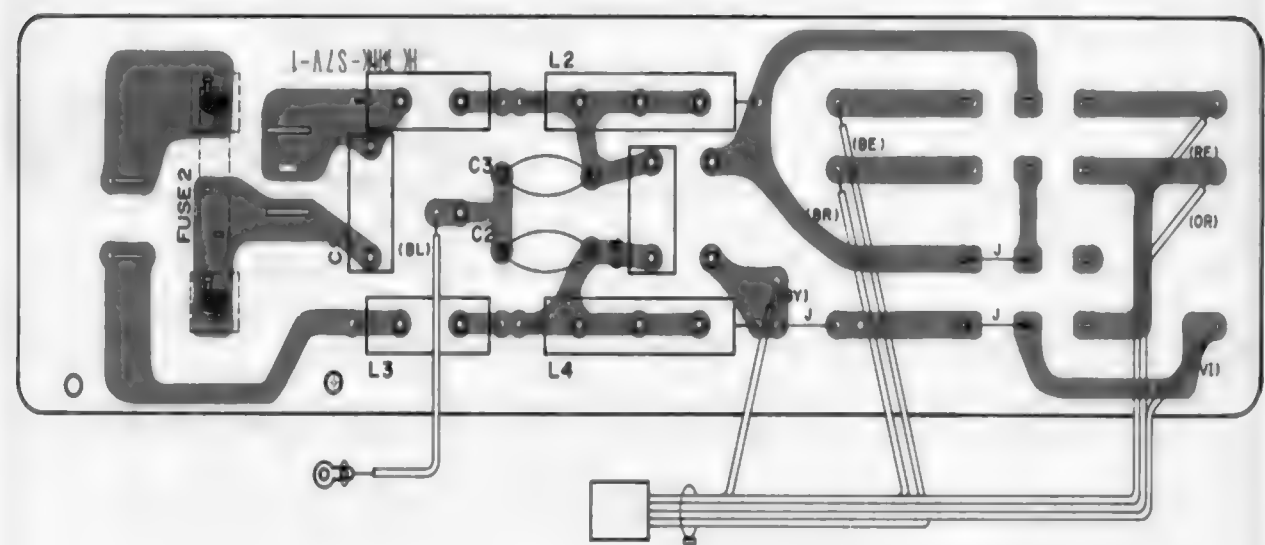


North European



View from the printed pattern side of the circuit board.

US



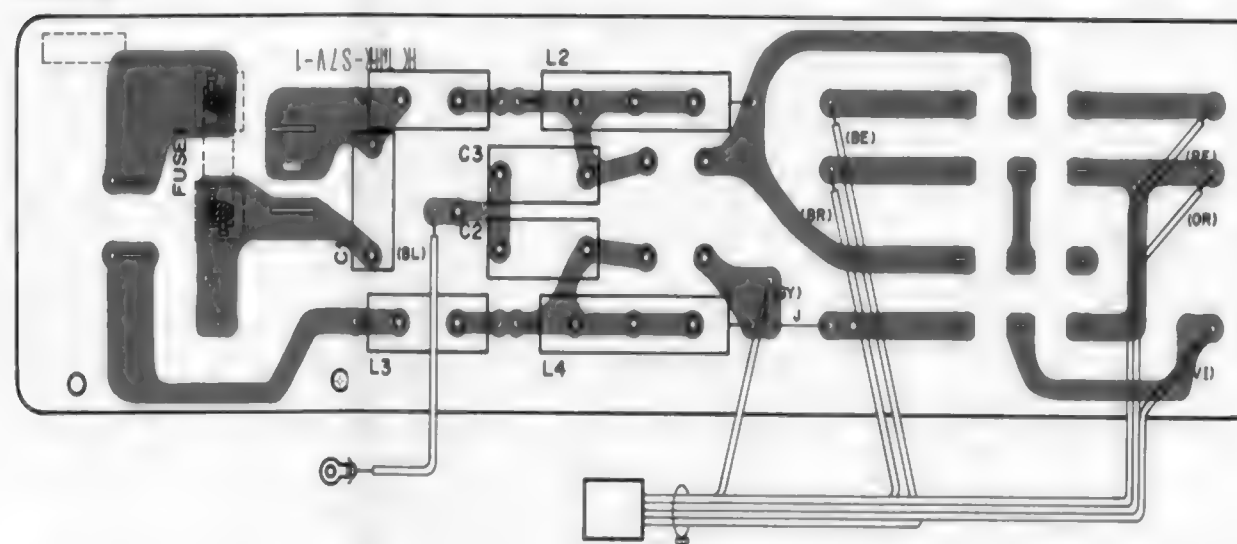
Notes)

1. Circuit Board : LC87260 ②
2. Fuse
 - Fuse 1 : North European 1.6A 250V KB00074
 - Fuse 2 : UL 3.0A 250V KB00265
3. Capacitor
 - C1 : 0.022 PME265
 - C2 ~ 3 : 0.0022 MY

KEP-NA80833-OZ ▲
KEP-NA80834-OZ ▲

AC Circuit Board & Wiring

JAPAN CSA.

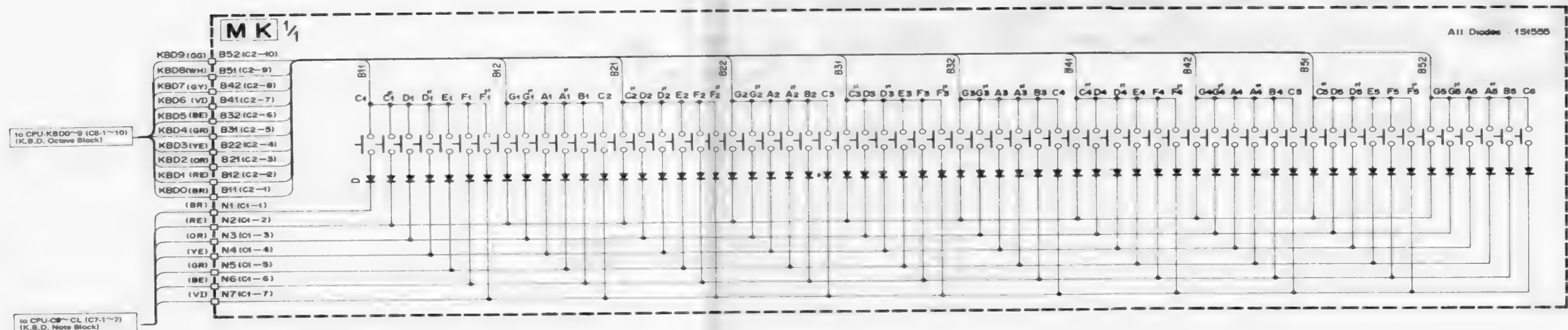
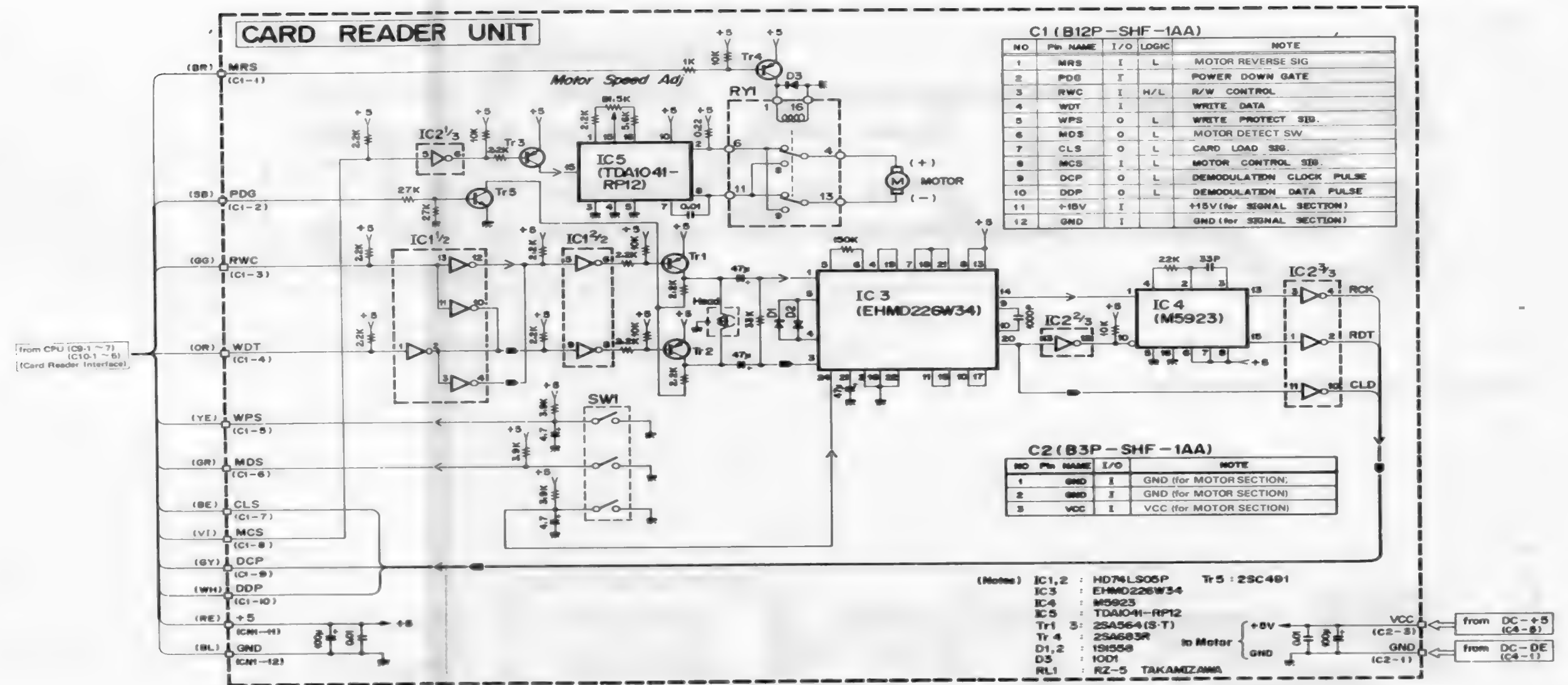


Notes)

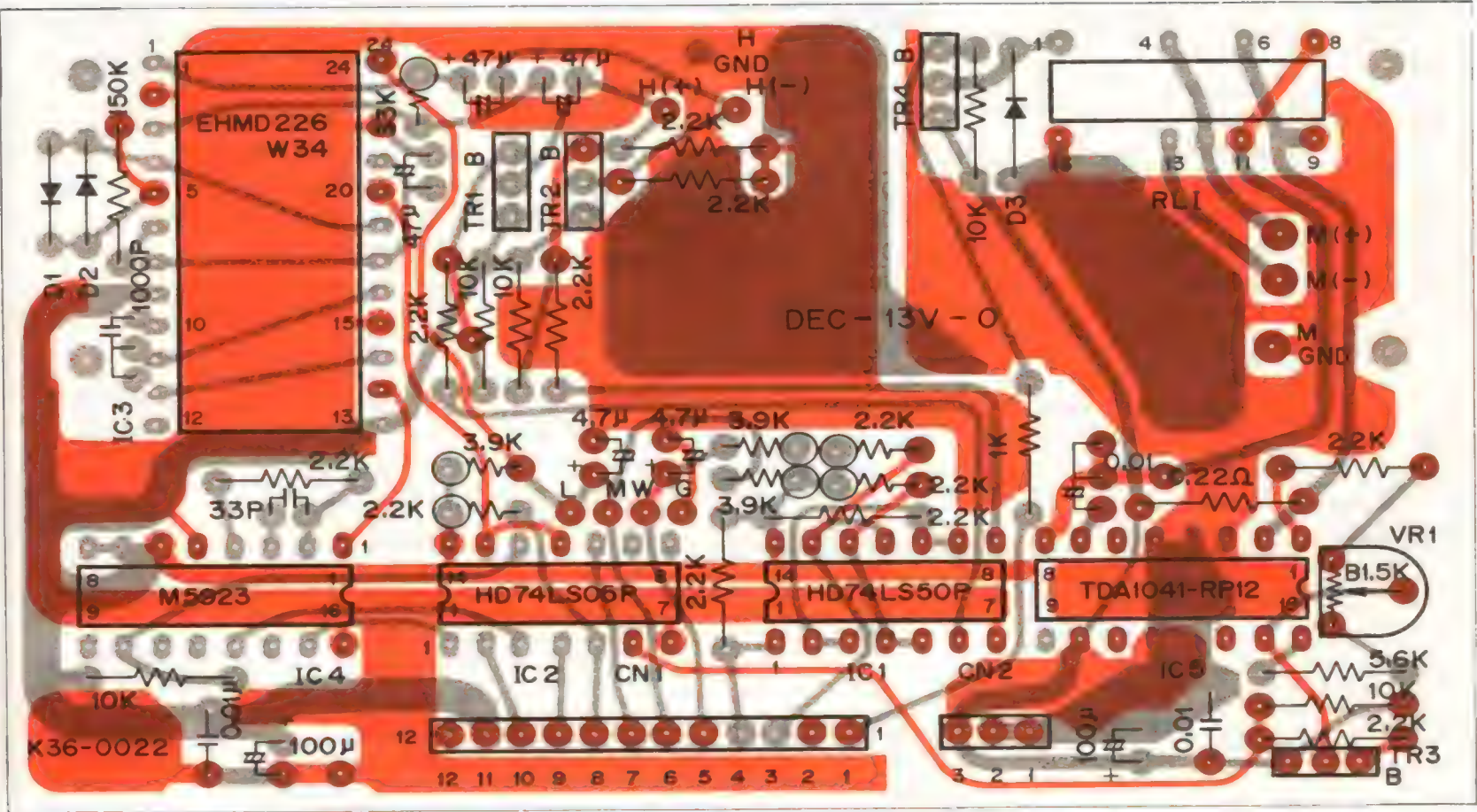
1. Circuit Board : LC87260 ②
2. Fuse : Japan 3A 250V KB00036
CSA 3A 250V KB00265
3. Capacitor
 - C1 : 0.022 PME265

KEP-NA80832-14
KEP-NA10726-14

MK, CR Circuit Diagram



MK, CR Circuit Board & Wiring



C1

Pin No.	Pin Name	Wire Color	Destination
1	MRS	BR	CPU-MRS (C9-5)
2	PON	SB	CPU-PON (C9-3)
3	RWC	GG	CPU-RWC (C9-6)
4	WDT	OR	CPU-WDT (C9-7)
5	WPS	YE	CPU-WPS (C10-3)
6	MDS	GR	CPU-MDS (C10-1)
7	CLS	BE	CPU-CLS (C10-2)
8	MCS	VI	CPU-MCS (C9-4)
9	DCP	GY	CPU-DCP (C9-2)
10	DDP	WH	CPU-DDP (C9-1)
11	+5	RE	CPU+5 (C10-5)
12	DE	BL	CPU-DE (C10-4)

C2

Pin No.	Pin Name	Wire Color	Destination
1	DE	BL	DC-DE (C4-1)
2	DE	-	-
3	+5	RE	DC+5 (C4-5)

C1

Pin No.	Pin Name	Wire Color	Destination
1	3	WH	CPA-XLR- (C2-3)
2	-	-	-
3	2	RE	CPA-XLR+ (C2-4)

C1

Pin No.	Pin Name	Wire Color	Destination
1	N1	BR	CPU-CL (C7-7)
2	N2	RE	CPU-C# (C7-1)
3	N3	OR	CPU-D (C7-2)
4	N4	YE	CPU-D# (C7-3)
5	N5	GR	CPU-E (C7-4)
6	N6	BE	CPU-F (C7-5)
7	N7	VI	CPU-F# (C7-6)

C1

Pin No.	Pin Name	Wire Color	Destination
1	4	BL	LF-BTP (C24-7)
2	1	BR	LF-BDN (C25-3)
3	2	RE	LF-BCT (C26-1)
4	3	OR	LF-BUP (C26-2)

C2

Pin No.	Pin Name	Wire Color	Destination
1	B11	BR	CPU-KBD0 (C8-1)
2	B12	RE	CPU-KBD1 (C8-2)
3	B21	OR	CPU-KBD2 (C8-5)
4	B22	YE	CPU-KBD3 (C8-4)
5	B31	GR	CPU-KBD4 (C8-3)
6	B32	BE	CPU-KBD5 (C8-6)
7	B41	VI	CPU-KBD6 (C8-7)
8	B42	GY	CPU-KBD7 (C8-8)
9	B51	WH	CPU-KBD8 (C8-9)
10	B52	GG	CPU-KBD9 (C8-10)

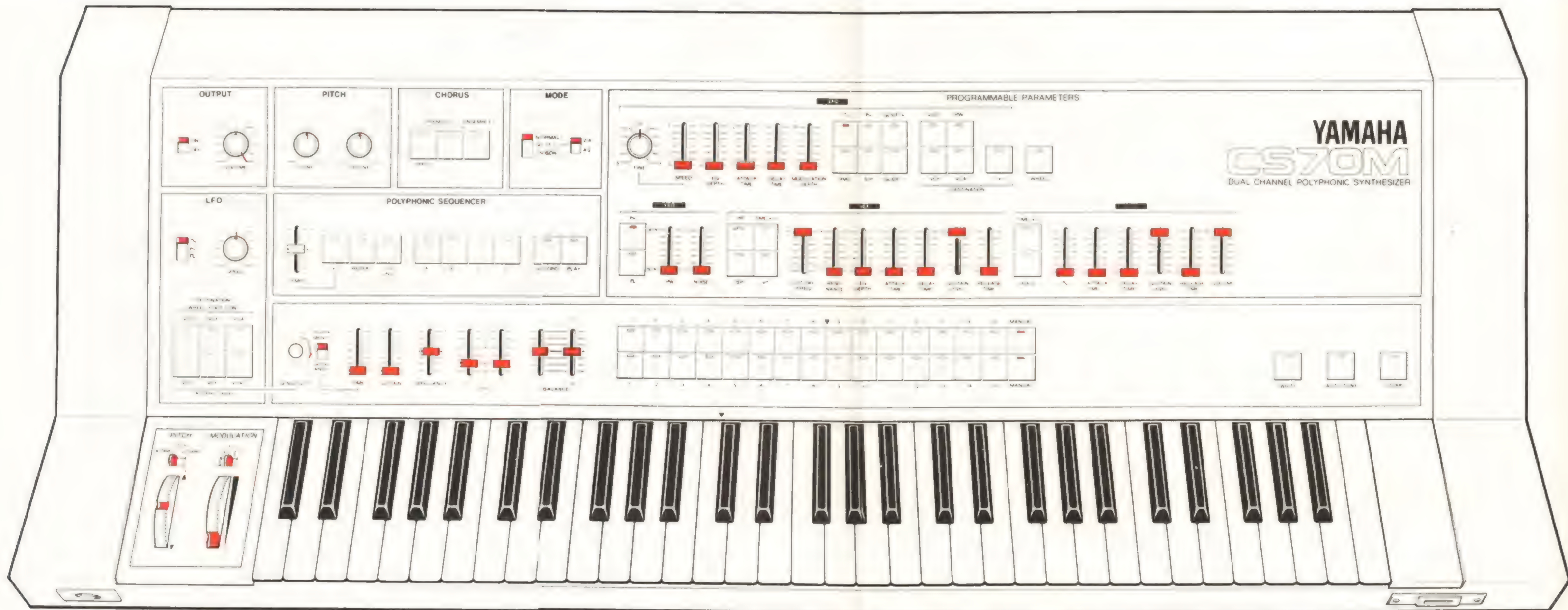
C1

Pin No.	Pin Name	Wire Color	Destination
1	3	RE	LF-WUP (C24-9)
2	2	BR	LF-WCT (C24-8)
3	1	BL	LF-WDN (C24-10)

PANEL SETTING

BLOCK	FUNCTION	POSITION
OUTPUT	ON/OFF VOLUME	ON 10
PITCH	TUNE DETUNE	0 0
CHORUS	SPEED TREMOLO ENSEMBLE	OFF OFF OFF
MODE	NORMAL/SPLIT/UNISON 2/4 / 4/2	NORMAL 2/4
LFO	~ / ^ / ▮ SPEED WHEEL/FOOT CONT. AFTER TOUCH SENSITIVITY	~ CENTER ALL OFF ALL OFF Extreme Clockwise
POLYPHONIC SEQUENCER	TEMPO OTHER SWITCHES	0 ALL OFF
PROGRAMM- ABLE PARAMETERS	VCO ▮	ON
	▮	OFF
	PW	50%
	NOISE	0
	FEET-I	8'
	FEET-II	8'
	VCF HP	OFF
	BP	OFF
	TIME x 5	OFF
	~	OFF
	CUT OFF	H
	FREQUENCY	
	RESONANCE	L
	EG DEPTH	0
	ATTACK TIME	S
	DECAY TIME	S
	SUSTAIN LEVEL	10
	RELEASE TIME	S
	VCA TIME x 5	OFF
	HOLD	OFF
	~	0
	ATTACK TIME	S
	DECAY TIME	S
	SUSTAIN LEVEL	10
	RELEASE TIME	S
	VOLUME	10

BLOCK	FUNCTION	POSITION
PROGRAMMA- ABLE PARAMETERS	LFO FINE	CENTER
	SPEED	S
	EG DEPTH	0
	ATTACK TIME	S
	DECAY TIME	S
	MODULATION	
	DEPTH	0
	~ , ▮ , S/H	
	GLIDE + GLIDE	~
	, RMO	
	VCO, PW, VCF, VCA	ALL OFF
	I + II	OFF
	WHEEL	OFF
EFFECT	PORTAMENTO/ GLISSAND TIME	PORTAMENTO S
	SUSTAIN	S
	BRILLIANCE	0
	2-4 BALANCE	CENTER
	I-II BALANCE	CENTER
PROGRAMMER	I CHANNEL II CHANNEL	MANUAL MANUAL
PITCH	OCTAVE/FIFTH/THIRD WHEEL	OCTAVE 0
MODULATION	I / I + II / II WHEEL	I + II 0

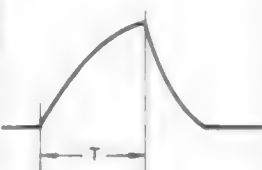
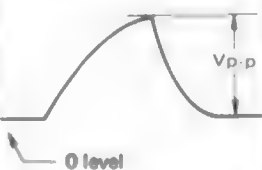
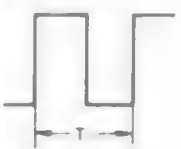
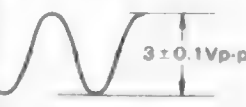


TUNING



No.	Adjustment	Measurement		Value	Adjustment Location		Conditions	Remarks
1	Supply Voltage 1) + 5V 2) +10V 3) +15V	DC	Test Point + 5V +10V +15V	+ 5 ± 0.1V +10 ± 0.1V +15 ± 0.05V	DC	VR1 VR2 VR3		
2	CONTROL VOLT	LF	CVO (C24-2)	4 ± 0.001V	LF	VR19		
		CPA	CVO (C4-3) DET (C4-1)	4 ± 0.001V 0 ± 0.01V	PANEL	TUNE DETUNE		
		DIF	OCT (C1-1) CMO (C8-1)	125 ± 0.1mV 125 ± 0.1mV	DIF	VR1 VR2	After pressing the C1 key more than 6 times.	
		MX1 MX2 MX3 MX4 MX5 MX6	CV (C1-3)	125 ± 0.1mV	DIF	VR3 VR4 VR5 VR6 VR7 VR8	Perform after replugging C4 into C5 and C19 into C18 on the DIF board. After adjustment replace C4 and C19.	
		REAR PANEL	SOLO OUT CONTROL VOLT			VR9		
3	TUNING 1) C6 KEY 2) C1 KEY	REAR PANEL	MIXED/1	C8 ± 1 φ C3 ± 1 φ	MX1-6 MY1-6	VR1 VR6	<ul style="list-style-type: none"> • MODE SWITCHNORMAL • PROGRAM SWITCH...MANUAL • FEET.....2' • VCO \downarrow . \downarrow ..OFF • VCA \sim10 	Perform when LEDs MX1-6, MY1-6 are lit.

CIRCUIT ORGANIZATION

Board Name	Circuit Organization	Board Name	Circuit Organization
CPA	D + Q Mixing Circuit Ring Modulator Control Circuit D + Q Mixing Level Circuit X + Y Balance Circuit Ensemble Control Circuit EXP Circuit Output Amplifier Circuit Tune/Detune Circuits LFO Control Circuit Brilliance Control Circuit, Sustain Circuit Aftertouch Sense Circuit Switch Matrix Circuit LED Matrix Circuit	DIF	Data Latch Circuit Channel I, II Control Voltage Generator Circuit D-A Convertor Sample and Hold Circuit Sustain Control Circuit Keyboard Trigger Circuit D-A Convertor Sample and Hold Circuit Trigger Latch Circuit
		LF	Programmable LFO Circuit Ring Modulator Circuit Signal Mixing Circuit Standard CV Generator Circuit White Noise Generator Circuit White Noise VCA Circuit LFO Signal Gate and Mixing Amplifier Circuit
		JK	Headphone Amplifier Circuit Output Muting Circuit Expression Pedal Drive Circuit x 3 Aftertouch Sense Circuit CV Voltage Divider Circuit
CPB	LED Matrix Switch Matrix Programmable LFO Speed Control Circuit, Display Circuit	ET	Input LPF Circuit Modulator Low-Frequency Generator Circuit BBD Clock Generator Circuit BBD Circuit Output LPF Circuit Amplitude Modulator Circuit
M	VCO Circuit WSC Circuit VCF Circuit VCA Circuit VCF-EG Circuit VCA-EG Circuit	DC	+15V Regulator Circuit -15V Regulator Circuit +10V Regulator Circuit -5V Regulator Circuit +5V Regulator Circuit Power Supply ON Detector Circuit (PON) Relay Drive Signal Generator (RYI)
MO	Bus Circuit		
CPU	Microprocessor and Peripheral Circuit Z-80 CPU Clock Circuit Interrupt Circuit ROM RAM Initial Clear Circuit RAM Battery Backup Circuit Card Reader Interface Panel LED Output Ports Panel Switch Input Ports Keyboard Inputs Ports TTL → C-MOS Level Shifter Circuits External Keycode Input Interface Auto-tune VCO Cycle Measurement Circuit		

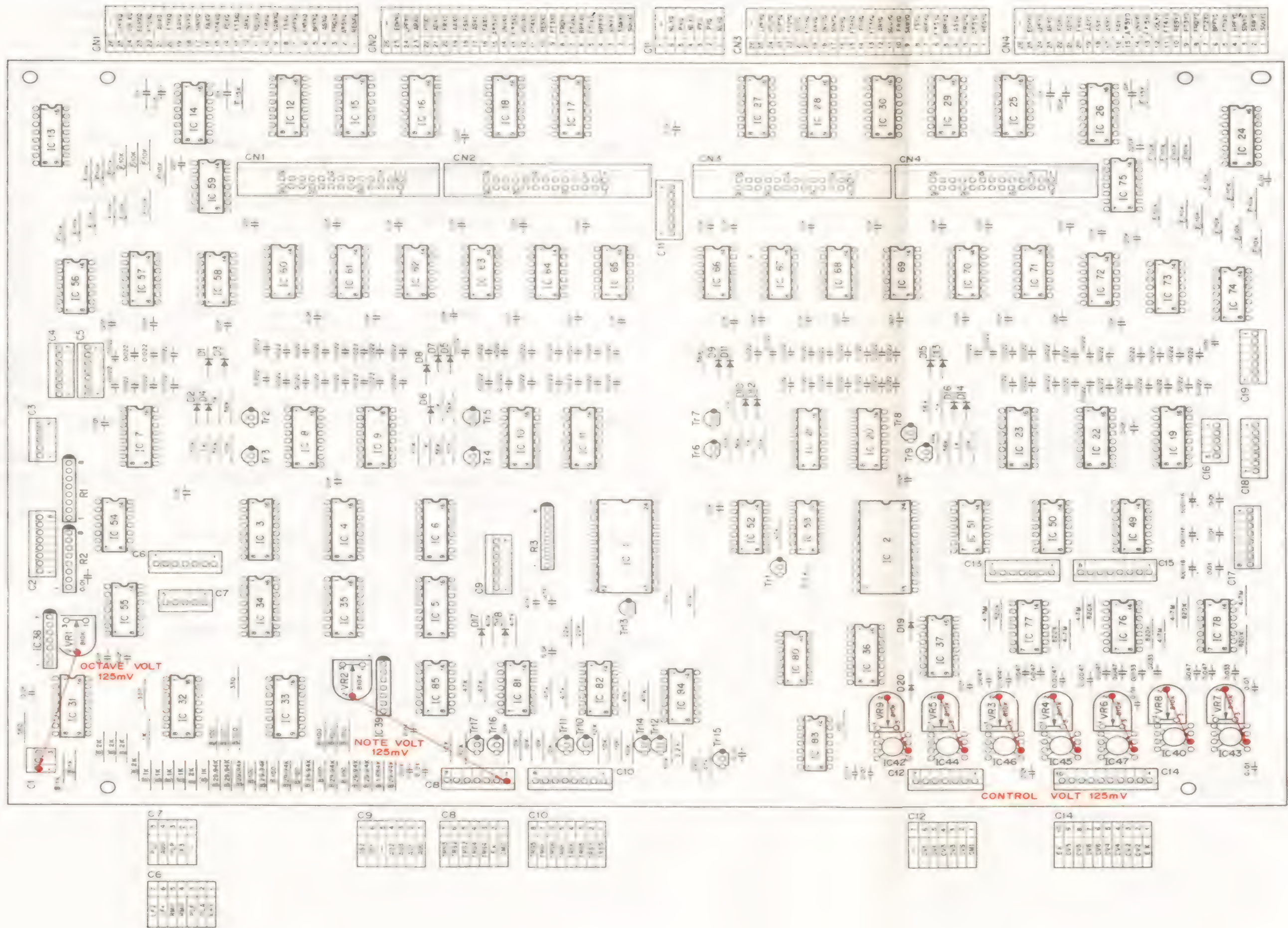
Adjustment	Measurement	Control Settings	Value	Adjustment Location	Remarks
Programmable LFO-EG	IC49-1	GLIDE +ON MODULATION DEPTH10 Set LAT (C19-2) voltage with Attack Time Lever.			Note: Both VR11 and VR12 affect ATTACK TIME adjustment each other. If the attack time is longer than 625 mSec adjust VR12 so that the attack time is slightly longer. If shorter, adjust VR12 so that the attack time is slightly shorter. Repeat steps 1) and 2).
		1) Set LAT to $8 \pm 0.1V$, KEY ON	$T = 20 \pm 2mSEC$	VR11	
		2) Set LAT to $3 \pm 0.1V$, KEY ON	$T = 625 \pm 50mSEC$	VR12	
		FINE 0 EG DEPTH 10 SPEED S			
	IC51-1	3) Set LAT to $8 \pm 0.1V$, KEY ON	$V_{p-p} = 2.7 \pm 0.1V_{p-p}$ $0 \text{ Level} = 0 \pm 50mV$	VR10 VR13	
Programmable LFO Frequency		FINE S			
	PLED (C17-1)	1) SPEED S 2) SPEED S	$T = 10 \pm 1SEC$ $T = 10 \pm 0.5mSEC$	VR20 VR9	
Programmable LFO VCA	PLFO (C14-3)	\sim ON MODULATION DEPTH 10		VR18	
Ring Modulator	MOD (C17-4)	SPEED F	Adjust for a sine wave of minimum level	VR21	

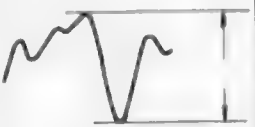

LF CIRCUIT BOARD

Adjustment	Measurement	Control Settings	Value	Adjustment Location	Remarks	
White Noise Level	NIS (C16-1)		+2 ± 0.5dBm	VR8		
White Noise VCA Gain	NSXQ (C12-3) NSXD (C12-2) NSYQ (C12-5) NSYD (C12-4)	NOISE 10	+2 ± 0.5dBm	VR2 VR1 VR4 VR3		
CV Amp. Bias Voltage	CVO (C24-2)		+4 ± 0.001V	VR19		
Non-Program-mable LFO Frequency	NLED (C16-4)	1) SPEED S	0.05 ± 0.005Hz	VR5		
		2) SPEED F	50 ± 1Hz	VR6		
Non-Program-mable LFO VCA Gain		SPEED F Waveform Switch....  SENSITIVITY.... MAX	 Vp-p = 2.5 ± 0.1Vp-p Vp-p = 1.5 ± 0.1Vp-p 0 level = 0 ± 50mV Vp-p = 3 ± 0.1Vp-p Vp-p = 3 ± 0.1Vp-p			
	TLFF (C14-2) TLFO (C14-1)	1) Press key strongly.		VR14 VR16		
	WLFF (C14-4)	2) Set Modulation wheel to Max.		VR7 VR15		
	WLFO (C14-5)			VR17		

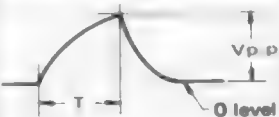

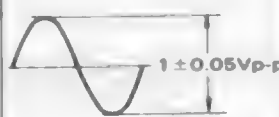
DIF CIRCUIT BOARD

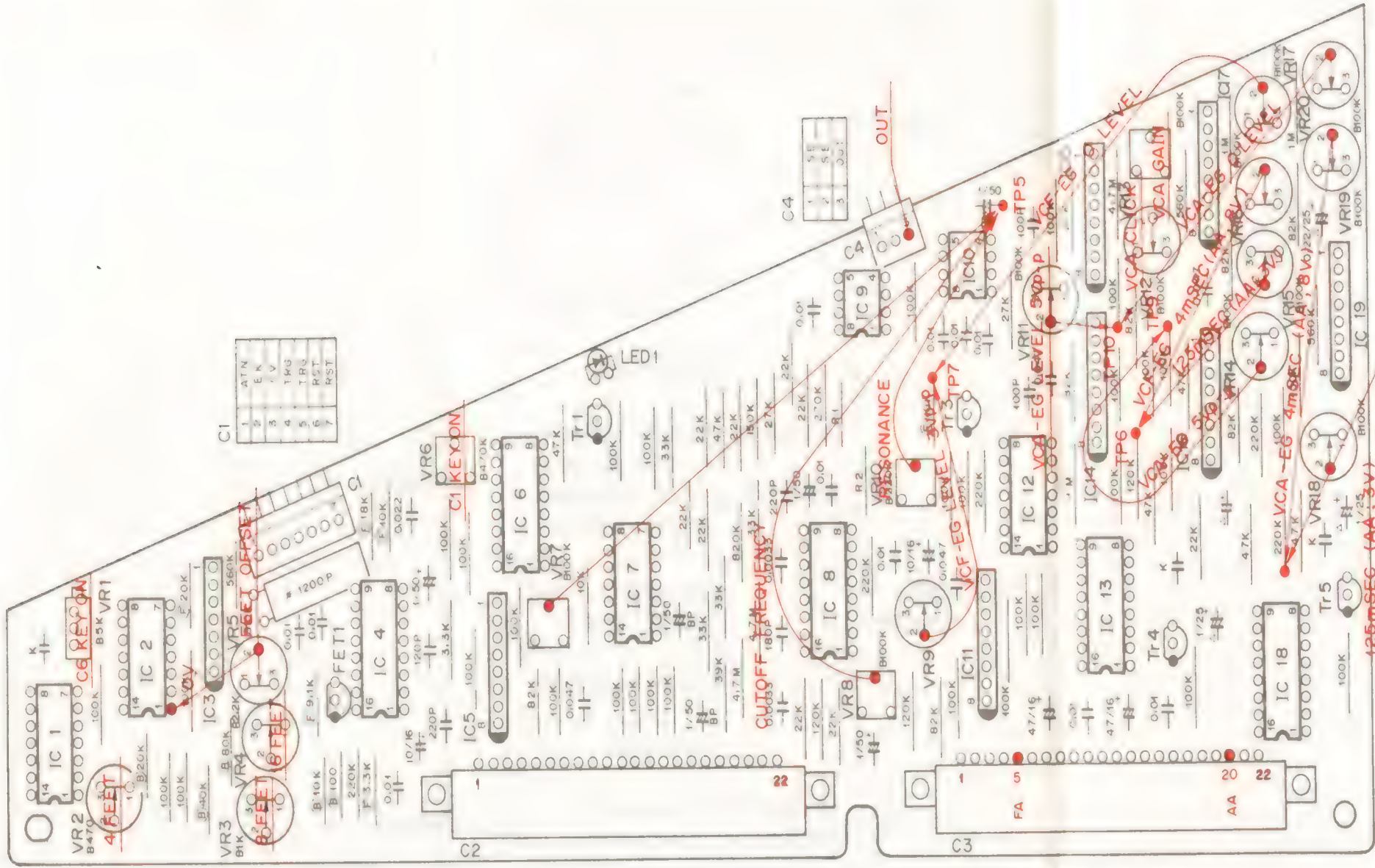
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Adjustment	Measurement	Control Settings	Value	Adjustment Location	Remarks
FEET Switch-over Circuit Offset Voltage	IC2-1	FEET 2' C1 KEY ON	$0 \pm 50\mu V$	VR5	
VCO Frequency	OUT (C4-3)	FEET 2' VCO \square OFF VCA \sim 10 1) C6 KEY ON 2) C1 KEY ON	$C8 \pm 1 \phi$ $C3 \pm 1 \phi$	VR1 VR6	Repeat 1) and 2) until specified values are obtained.
FEET Resistance	OUT (C4-3)	VCO \square OFF VCA \sim 10 C6 KEY ON 1) FEET 4' 2) FEET 8' 3) FEET 16'	$C7 \pm 1 \phi$ $C6 \pm 1 \phi$ $C5 \pm 1 \phi$	VR2 VR3 VR4	
CUT OFF Frequency RESONANCE	TP5	VCO \square ON VCO \square OFF Set FRQ (C2-19) to $+5 \pm 0.1V$ with Cutoff Freq. lever. Set RES (C2-22) to $+5 \pm 0.1V$ with Resonance lever. FEET 2' C3 KEY ON		VR8 VR10	Adjust VR9 and VR10 for the waveform and level shown at left.
Sine Wave Level	TP5	VCO \square OFF VCO \square OFF VCA \sim 10 FEET 2' C4 KEY ON		VR7	
VCA Click	OUT (C4-3)	VCA \sim 0 Programmable LFO SPEED F FINE 0 \sim ON DESTINATION VCA ON Set AMD (C3-19) to 2Vp-p with Modulation Depth lever.	Minimize 100Hz sine wave.	VR12	

M CIRCUIT BOARD

Adjustment	Measurement	Control Settings	Value	Adjustment Location	Remarks
VCF-EG	TP6	Set FA (C3-5) voltage with VCF Attack Time lever.			<p>Note: Both VR16 and VR15 affect ATTACK TIME adjustment each other.</p> <p>If the attack time is longer than 125 mSec adjust VR15 so that the attack time is slightly longer. If shorter, adjust VR15 so that the attack time is slightly shorter.</p> <p>Repeat steps 1) and 2).</p>
		1) Set FA to $8 \pm 0.1V$, KEY ON	$T = 4 \pm 0.2mSEC$	VR16	
	TP7	2) Set FA to $3 \pm 0.1V$, KEY ON	$T = 125 \pm 6mSEC$	VR15	
		3) EG DEPTH 10	$V_{p-p} = 3 \pm 0.1V_{p-p}$	VR9	
		Set FA to $8 \pm 0.1V$, KEY ON	0 level = $0 \pm 50mV$	VR17	
VCA-EG	TP8	Set AA (C3-20) voltage with VCA Attack Time lever.			<p>Note: Both VR19 and VR18 affect ATTACK TIME adjustment each other.</p> <p>If the attack time is longer than 125 mSec adjust VR18 so that the attack time is slightly longer. If shorter, adjust VR18 so that the attack time is slightly shorter.</p> <p>Repeat steps 1) and 2).</p>
		1) Set AA to $8 \pm 0.1V$, KEY ON	$T = 4 \pm 0.2mSEC$	VR19	
	TP9	2) Set AA to 3 ± 0.1 , KEY ON	$T = 125 \pm 6mSEC$	VR18	
		3) Set AA to $8 \pm 0.1V$, KEY ON.	$V_{p-p} = 5 \pm 0.1V_{p-p}$	VR14	
	TP10	4) VCA Volume..... 10	$V_{p-p} = 5 \pm 0.1V_{p-p}$	VR11	
		KEY ON	0 level = $0 \pm 50mV$	VR20	
VCA Gain	OUT (C4-3)	VCON \square OFF VCA \sim 10 VCA SUSTAIN LEVEL 10 VCA VOLUME 10 FEET 2' C4 KEY ON		VR13	



C1

1	ATN
2	EK
3	V
4	TWG
5	TRG
6	RST
7	RST

C2

1	PW
2	FT4
3	FT1
4	FT3
5	FT2
6	DTN
7	SIN
8	OMD
9	+10
10	-5
11	SOU
12	SAW
13	XPF
14	BPF
15	WNS
16	-
17	-
18	-
19	FRQ
20	FMD
21	BR1
22	RES

C3

1	EDP
2	LPF
3	VOL
4	INV
5	FA
6	FD
7	FR
8	FS
9	-5
10	-15
11	GND
12	GND
13	GND
14	+15
15	+15
16	FX5
17	AX5
18	AS
19	AMD
20	AA
21	AD
22	AR

CPA CIRCUIT BOARD

Adjustment	Measurement	Control Settings	Value	Adjustment Location	Remarks
D + Q Mixing		MODE SWITCH NORMAL PROGRAM SWITCH MANUAL VCO \wedge , \sqcup OFF FEET 8' VCA \wedge 10 VCA SUSTAIN LEVEL 10 C5 KEY ON			
	MXX (C8-10) MXY (C8-7)	1) MX1-4 oscillating 2) MX5,6 oscillating 3) MY1-4 oscillating 4) MY5,6 oscillating	$250 \pm 20\text{mVp-p}$	VR1 VR2 VR3 VR4	
Output Amplifier		Same settings as above. OUTPUT SWITCH OFF OUTPUT VOLUME 10 C5 KEY ON			
	HPX (C2-2) HPY (C2-1)	1) BALANCE I 2) BALANCE II	$0.5 \pm 0.05\text{Vp-p}$	VR6 VR5	

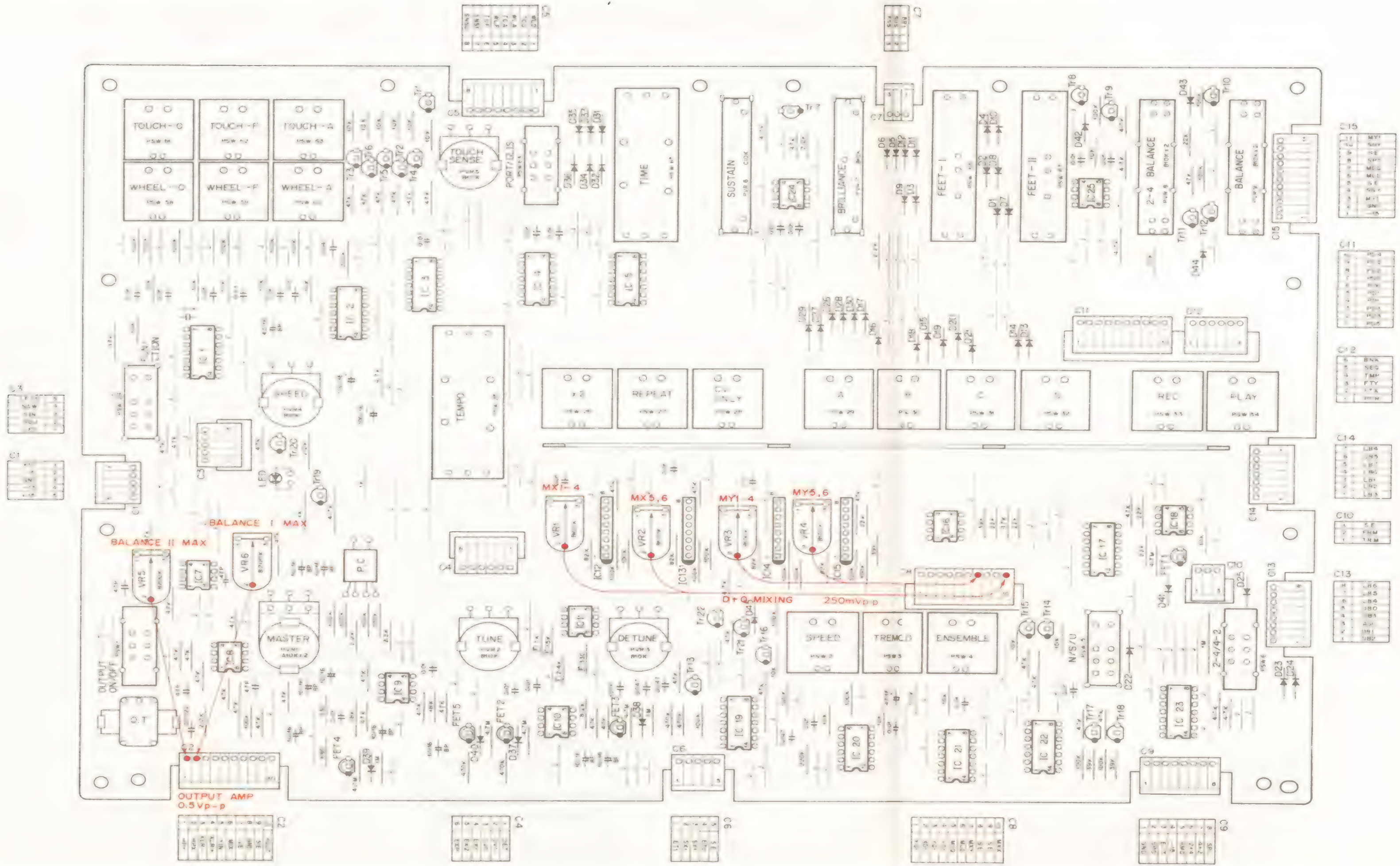


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Table with 2 columns: Pin, Value

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Table with 2 columns: Pin, Value

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Table with 2 columns: Pin, Value

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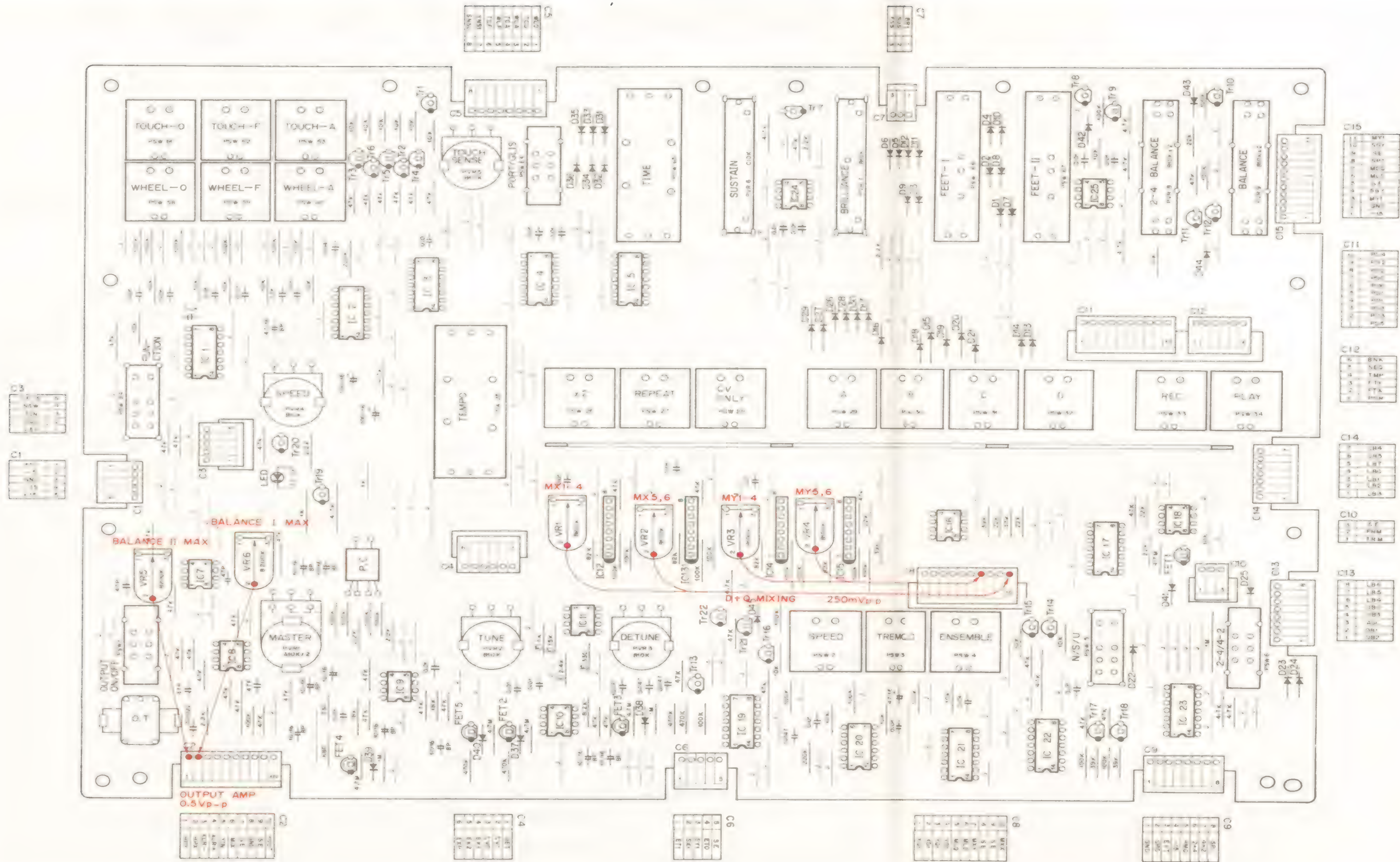
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3	10K
4	10K
5	10K
6	10K
7	10K
8	10K

Table with 2 columns: Pin, Value




1	10K
2	10K
3	10K
4	10K
5	10K
6	10K
7	10K
8	10K

CPA CIRCUIT BOARD

Adjustment	Measurement	Control Settings	Value	Adjustment Location	Remarks
D + Q Mixing		MODE SWITCH NORMAL PROGRAM SWITCH MANUAL VCO Λ , Π OFF FEET 8' VCA \sim 10 VCA SUSTAIN LEVEL 10 C5 KEY ON			
	MXX (C8-10) MXY (C8-7)	1) MX1-4 oscillating 2) MX5,6 oscillating 3) MY1-4 oscillating 4) MY5,6 oscillating	$250 \pm 20\text{mV}_{\text{p-p}}$	VR1 VR2 VR3 VR4	
Output Amplifier		Same settings as above. OUTPUT SWITCH OFF OUTPUT VOLUME 10 C5 KEY ON			
	HPX (C2-2) HPY (C2-1)	1) BALANCE I 2) BALANCE II	$0.5 \pm 0.05\text{V}_{\text{p-p}}$	VR6 VR5	

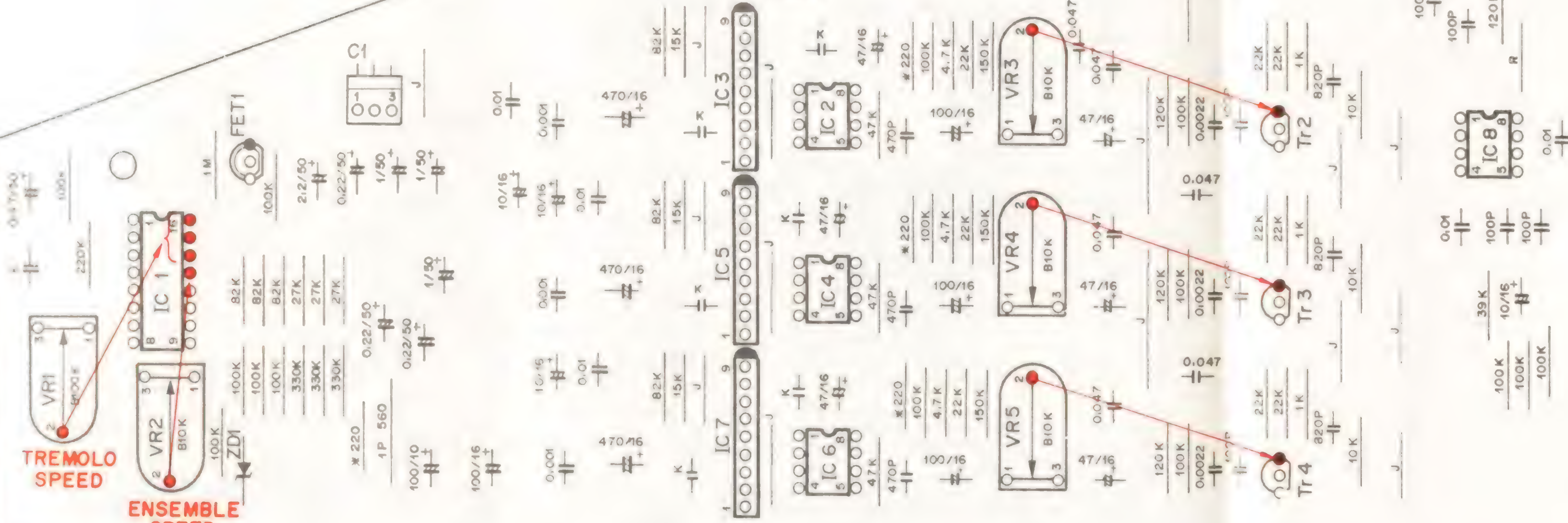


ET CIRCUIT BOARD

Adjustment	Measurement	Control Settings	Value	Adjustment Location	Remarks
ENSEMBLE SPEED	IC1-13	ENSEMBLE ON	6.4 ± 0.1Hz 	VR2	
TREMOLO SPEED	IC1-16 IC1-14 IC1-15	TREMOLO ON SPEED ON	6.4 ± 0.1Hz  	VR1	
	TR2 emitter TR3 emitter TR4 emitter	Connect IC1-9 to -15V. FEET 8' VCO N, L OFF VCA ~ 10 VCA SUSTAIN LEVEL 10 VCA VOLUME 10 TREMOLO ON C5 KEY ON	Adjust all pots for as near perfect a sine wave as possible.	VR3 VR4 VR5	

TREMOLO
SPEED

ENSEMBLE
SPEED



C1

1	S
2	TE
3	

C2

1	-
2	E
3	I

C3

1	0
2	E
3	-15
4	E
5	+15

C3

1	0
2	E
3	-15
4	E
5	+15

DC CIRCUIT BOARD

[illegible]

YAMAHA

**DUAL CHANNEL
POLYPHONIC SYNTHESIZER**

CS-70M

PARTS LIST

CONTENTS

A. Electronic Components	1
B. Cabinet Assembly	8
C. Keyboard Assembly	11
D. Control Panel	13

A. Electronic Components

Ref. No.	Part No.	Description	品名	Remarks	Common Model	Markets
	NA 80 77 10	Circuit Board, CPA	# 8694	C P A シ ー ト		
	NA 80 77 20	- do. - , CPB	# 8695	C P B シ ー ト		
	NA 80 77 30	- do. - , MY	# 8696	M Y シ ー ト		
	NA 80 77 40	- do. - , MO	# 8697	M O シ ー ト		
	NA 80 77 50	- do. - , CPU	# 8698	C P U シ ー ト		
	NA 80 77 60	- do. - , DIF	# 8699	D I F シ ー ト		
	NA 80 77 70	- do. - , LF	# 8700	L F シ ー ト		
	NA 80 77 80	- do. - , JK	# 8701	J K シ ー ト		
	NA 80 78 10	- do. - , ET	# 8704	E T シ ー ト		
	NA 80 82 70	- do. - , MX	# 8696	M X シ ー ト		
	NA 80 82 80	- do. - , DC	# 8707	D C シ ー ト		J
	NA 80 82 90	- do. - , - do. -	- do. -	"		U, C
	NA 80 83 00	- do. - , - do. -	- do. -	"		G
	NA 80 83 20	- do. - , AC	# 8726	A C シ ー ト		J
	NA 80 83 30	- do. - , - do. -	- do. -	"		U
	NA 80 83 40	- do. - , - do. -	- do. -	"		G
	NA 10 72 60	- do. - , - do. -	- do. -	"		C
	NA 10 17 60	- do. - , MK		M K シ ー ト	CP10	
	IG 00 11 70	IC	TC4001BP	I C	NOR	
	IG 00 11 80	- do. -	TC4013BP	"	D Flip-Flop	
	IG 00 12 40	- do. -	TC4011BP	"	2-input NAND	
	IG 00 12 60	- do. -	TC4049BP	"	Inverter	
	IG 00 12 70	- do. -	TC4066BP	"	Quad Bilateral Switch	
	IG 00 13 90	- do. -	NJM4558DV	"	Dual OP Amp	
	IG 00 14 40	- do. -	TC4071BP	"	OR	
	IG 00 15 00	- do. -	M51620P	"	VCOI	
	IG 00 15 10	- do. -	M51621L	"	VCA	
	IG 00 15 30	- do. -	M51623P	"	VCOIII	
	IG 00 15 60	- do. -	M51626P	"	VCF	
	IG 00 15 80	- do. -	M51628P	"	W.S.C.	
	IG 00 15 90	- do. -	M51629P	"	EG-VCA	
	IG 00 16 20	- do. -	μA796HC	"	Ring Modulator	
	IG 00 16 90	- do. -	TC4016BP	"	Quad Bilateral Switch	
	IG 00 17 30	- do. -	TC4073BP	"	AND	
	IG 00 17 60	- do. -	TC4081BP	"	AND	
	IG 00 17 70	- do. -	TC4051BP	"	Analog Switch	
	IG 02 55 00	- do. -	TA7504S	"	OP Amp	
	IG 02 56 00	- do. -	TA7505M	"	OP Amp	
	IG 02 60 00	- do. -	IG02600	"	VCA	
	IG 02 69 10	- do. -	HD74LS00	"	NAND	
	IG 02 70 10	- do. -	HD74LS04	"	Inverter	
	IG 03 29 00	- do. -	IG03290	"	BBD Driver	
	IG 03 36 00	- do. -	μPC624D	"	D/A Converter	
	IG 03 48 00	- do. -	TA7317P	"	Relay Driver	
	IG 03 55 00	- do. -	TC4028BP	"	BCD to Decimal Decoder	
	IG 03 58 00	- do. -	TC40175BP	"	D Flip-Flop	
	IG 03 59 10	- do. -	M58981P	"	RAM CMOS	
	IG 03 74 70	- do. -	μPD4069C	"	Hex Inverter	
	IG 04 33 00	- do. -	TC4093BP	"	NAND	
	IG 04 37 00	- do. -	HD74LS08P	"	AND	
	IG 04 40 00	- do. -	HD74LS74A	"	D Flip-Flop	
	IG 04 42 00	- do. -	HD74LS138P	"	Decoder/Demultiplexer	

* New Parts (新規部品) (J: Japan, U: US American, C: Canadian, G: General)

Ref. No.	Part No.	Description	品 名	Remarks	Common Model	Markets
	IG 04 44 00	IC	HD74LS161P	I C	Binary Counter	
	IG 04 61 00	- do. -	MN3009	"	25688D	
	IG 04 77 00	- do. -	TC4514P	"	Decoder	
	IG 04 96 00	- do. -	HD74LS14P	"	Hex Schmitt Trigger Inverter	
	IG 04 97 00	- do. -	HD74LS30P	"	NAND	
	IG 04 98 00	- do. -	HD74LS32P	"	OR	
	IG 04 99 00	- do. -	HD74LS139P	"	Decoder / Demultiplexer	
	IG 05 00 00	- do. -	HD74LS174P	"	D Flip-Flop	
	IG 05 01 00	- do. -	HD74LS175P	"	D Flip-Flop	
	IG 05 02 00	- do. -	HD74LS253P	"	Data Selector / Multiplexer	
	IG 05 03 00	- do. -	HD74LS293P	"	Binary Counter	
	IG 05 04 00	- do. -	HD74LS367P	"	Hex Bus Driver	
	IG 05 06 00	- do. -	HD74LS393P	"	Binary Counter	
	IG 05 07 00	- do. -	HD74LS374P	"	D Flip-Flop	
	IG 05 08 00	- do. -	TC40174BP	"	D Flip-Flop	
	IG 05 09 00	- do. -	TC4515BP	"	Latch/Decoder	
	IG 05 10 00	- do. -	TC40H004P	"	Hex Inverter	
	IG 05 11 00	- do. -	TC40H074P	"	D Flip-Flop	
	IG 05 14 00	- do. -	μPD780C	"	CPU	
	IG 05 15 00	- do. -	TC084CN	"	OP Amp	
	IG 05 19 00	- do. -	TC4020BP	"	Counter	
	IG 05 20 00	- do. -	HD14503BP	"	Buffer	
	IG 05 25 00	- do. -	TC082CP	"	OP Amp	
	IG 05 26 00	- do. -	HD74LS05P	"	Hex Inverter	
	IG 05 29 00	- do. -	M5L2114LP	"	RAM NMOS	
	IN 00 36 00	- do. -	μPD2716D	"	PROM (IC49, CPU BOARD)	
	IN 00 37 00	- do. -	- do. -	"	PROM (IC50, CPU BOARD)	
	IN 00 38 00	- do. -	- do. -	"	PROM (IC51, CPU BOARD)	
	IT 63 30 00	- do. -	YM63300	"	SECII	
	IA 09 50 00	Transistor	2SA950(Y)	ト ラ ン ジ ス ト		
	IA 10 15 70	- do. -	2SA1015(O,Y)	"		
	IA 11 64 10	- do. -	2SA1164(GR)	"		
	IB 05 60 00	- do. -	2SB560	"		
	IB 05 96 30	- do. -	2SB596(O,Y)	"		
	IB 06 88 00	- do. -	2SB688(R,O)	"		
	IC 07 52 20	- do. -	2SC752(Y)	"		
	IC 18 15 70	- do. -	2SC1815(O,Y)	"		
	IC 21 20 00	- do. -	2SC2120	"		
	ID 04 38 00	- do. -	2SD438	"		
	ID 05 26 30	- do. -	2SD526(O,Y)	"		
	ID 07 18 00	- do. -	2SD718(R,O)	"		
	IE 00 00 10	FET	2SK30A(Y)	F E T		
	IE 10 12 00	- do. -	2SK105(E)	"		
	IE 10 12 30	- do. -	- do. -(F)	"		
	IF 00 00 40	Diode	1S1555	ダ イ オード		
	IF 00 03 00	- do. -	1S1715P	"		
	IF 00 04 30	- do. -	02Z6.8A	"		
	IF 00 04 60	- do. -	1S1555	"		
	IF 00 08 80	- do. -	WZ050	"		
	IF 00 11 90	LED	TLR-124	L E D		

※ New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets
	iF 00:16:60	Diode	RD3.6E81	ダイオード		
	iF 00:16:90	- do. -	RD5.6E83	"		
	iF 00:17:00	- do. -	RD15E83	"		
	iF 00:20:00	LED	SLC22VR	LED		
	iH 00:01:10	Diode	5B-2	ダイオード		
	iH 00:07:20	- do. -	W03B	"		
	HO 23:00:70	Slide Variable Resistor	B10K Ω	スライドボリューム	BRILLIANCE	
	HO 23:00:90	- do. -	C10K Ω	"	SUSTAIN	
	HO 23:01:60	- do. -	BH10K $\Omega \times 2$	"	BALANCE	
	HR 50:00:30	Rotary Variable Resistor	B10K Ω	ロータリーボリューム	Wheel PITCH	
	HS 31:05:70	- do. -	B10K Ω	"	TUNE, DETUNE	
	HS 31:09:90	- do. -	A10K $\Omega \times 2$	"	SPEED, FINE	
	HS 42:03:10	- do. -	B10K Ω	"	MASTER	
	HS 42:03:20	- do. -	B10K Ω	"	Wheel MOD	
	HT 18:01:20	Semi Variable Resistor	B10K	半固定抵抗	TOUCH SENSE	
	HT 19:00:50	- do. -	B10K Ω	"		
	HT 19:00:80	- do. -	B100K Ω	"		
	HT 19:00:90	- do. -	B200K Ω	"		
	HT 19:01:30	- do. -	B2K Ω	"		
	HT 37:00:20	- do. -	B10K Ω	"		
	HT 41:00:20	- do. -	B1K Ω	ソリッドボリューム		
	HT 41:00:30	- do. -	B2.2K Ω	"		
	HT 41:00:70	- do. -	B10K Ω	"		
	HT 41:00:90	- do. -	B100K Ω	"		
	HT 41:01:00	- do. -	B220K Ω	"		
	HT 41:01:20	- do. -	B470 Ω	"		
	HT 41:01:90	- do. -	B100K Ω	"		
	HT 41:03:30	- do. -	B220K Ω	"		
	HT 41:03:40	- do. -	B470K Ω	"		
	HT 69:00:40	- do. -	B5K Ω	半固定抵抗		
	HL 31:24:70	Metal Oxide Film Resistor	0.47 Ω 1P	酸化金属皮膜抵抗		
	HL 32:36:80	- do. -	6.8 Ω 2P	"		
	HL 32:51:50	- do. -	150 Ω 2P	"		
	HL 51:22:20	- do. -	0.22 Ω 1P	"		
	HL 51:34:70	- do. -	4.7 Ω 1P	"		
	HL 51:53:30	- do. -	330 Ω 1P	"		
	HL 51:55:60	- do. -	560 Ω 1P	"		
	HU 57:53:00	Metal Film Resistor	300 Ω	金属皮膜抵抗		
	HU 57:61:00	- do. -	1K Ω	"		
	HU 57:61:80	- do. -	1.8K Ω	"		
	HU 57:62:40	- do. -	2.4K Ω	"		
	HU 57:62:70	- do. -	2.7K Ω	"		
	HU 57:63:30	- do. -	3.3K Ω	"		
	HU 57:66:20	- do. -	6.2K Ω	"		
	HU 57:68:20	- do. -	8.2K Ω	"		
	HU 57:69:10	- do. -	9.1K Ω	"		
	HU 57:71:00	- do. -	10K Ω	"		
	HU 57:71:50	- do. -	15K Ω	"		

※ New Parts (新規部品)

Ref. No.	Part No.	Description		部 品 名	Remarks	Common Model	Markets
	HU 57 71 80	Metal Film Resistor	18K Ω	金 属 皮 膜 抵 抗			
	HU 57 72 00	- do. -	20K Ω	"			
	HU 57 73 90	- do. -	39K Ω	"			
	HU 59 71 30	- do. -	13K Ω	"			
	HU 59 71 40	- do. -	14K Ω	"			
	HZ 00 12 10	- do. -	252.6K Ω	"			
	HZ 00 12 20	- do. -	334.8K Ω	"			
	HZ 00 12 30	- do. -	412.6K Ω	"			
	HZ 00 12 40	- do. -	476.8K Ω	"			
	HZ 00 12 50	- do. -	519.8K Ω	"			
	HZ 00 12 60	- do. -	1.005K Ω	"			
	HZ 00 17 30	- do. -	1K Ω	"			
	HZ 00 17 40	- do. -	2K Ω	"			
	HZ 00 17 60	- do. -	10K Ω	"			
	HZ 00 17 70	- do. -	20K Ω	"			
	HZ 00 17 80	- do. -	40K Ω	"			
	HZ 00 17 90	- do. -	80K Ω	"			
	HZ 00 18 30	- do. -	1.684K Ω	"			
	HZ 00 18 70	- do. -	29.94K Ω	"			
	HZ 00 19 30	- do. -	100 Ω	"			
	HZ 00 21 00	Module Resistor	10K Ω x 6	モ ジ ュ ー ル 抵 抗			
	HZ 00 21 20	- do. -	10K Ω x 8	"			
	HZ 00 21 40	- do. -	10K Ω x 4	"			
	HZ 00 22 00	- do. -	47K Ω x 7	"			
	HZ 00 22 10	- do. -	100K Ω x 7	"			
	HW 29 34 70	Fuse Resistor	2.7 Ω /230mA	ヒ ュ ー ズ 抵 抗			
	FF 04 31 20	Polystyrene Capacitor	1200PF	防 湿 型 ス テ コ ン			
	FL 63 71 00	Bipolar Capacitor	10 μ F/16V	バ イ ポ ー ラ コ ン テ ン サ			
	FL 66 61 00	- do. -	1 μ F/50V	"			
	FM 92 94 70	Electrolytic Capacitor	4700 μ F/35V	ケ ミ コ ン			
	FZ 00 16 40	- do. -	10000 μ F/45V	"			
	FN 54 52 20	Solid Aluminum Capacitor	0.22 μ F/25V	固 体 アル ミ コ ン テ ン サ			
	FN 54 61 00	- do. -	1 μ F/25V	"			
	FN 64 52 20	- do. -	0.22 μ F/25V	"			
	FN 64 61 00	- do. -	1 μ F/25V	"			
	FP 04 62 20	Tantalum Capacitor	2.2 μ F/25V	タ ン タ ル コ ン テ ン サ			
	FZ 00 22 50	Spark Suppressor Cap.	0.022 μ F/250V	ス パ ー ク キ ラ ー			
	FZ 00 28 50	Ceramic Capacitor	0.0022 μ F	セ ラ コ ン			U
	KA 10 08 10	Power Switch		パ ウ ー ス イ ッ チ			G
	KA 10 10 60	- do. -		"			J, U
	KA 30 06 00	- do. -		"			C
	KA 40 05 70	Slide Switch	2 - 2 (S)	ス ラ イ ド ス イ ッ チ	2-4/4-2 (SPLIT)		
	KA 40 05 90	- do. -	2 - 3 (NS)	"	FUNCTION		

◆ New Parts (新規部品)

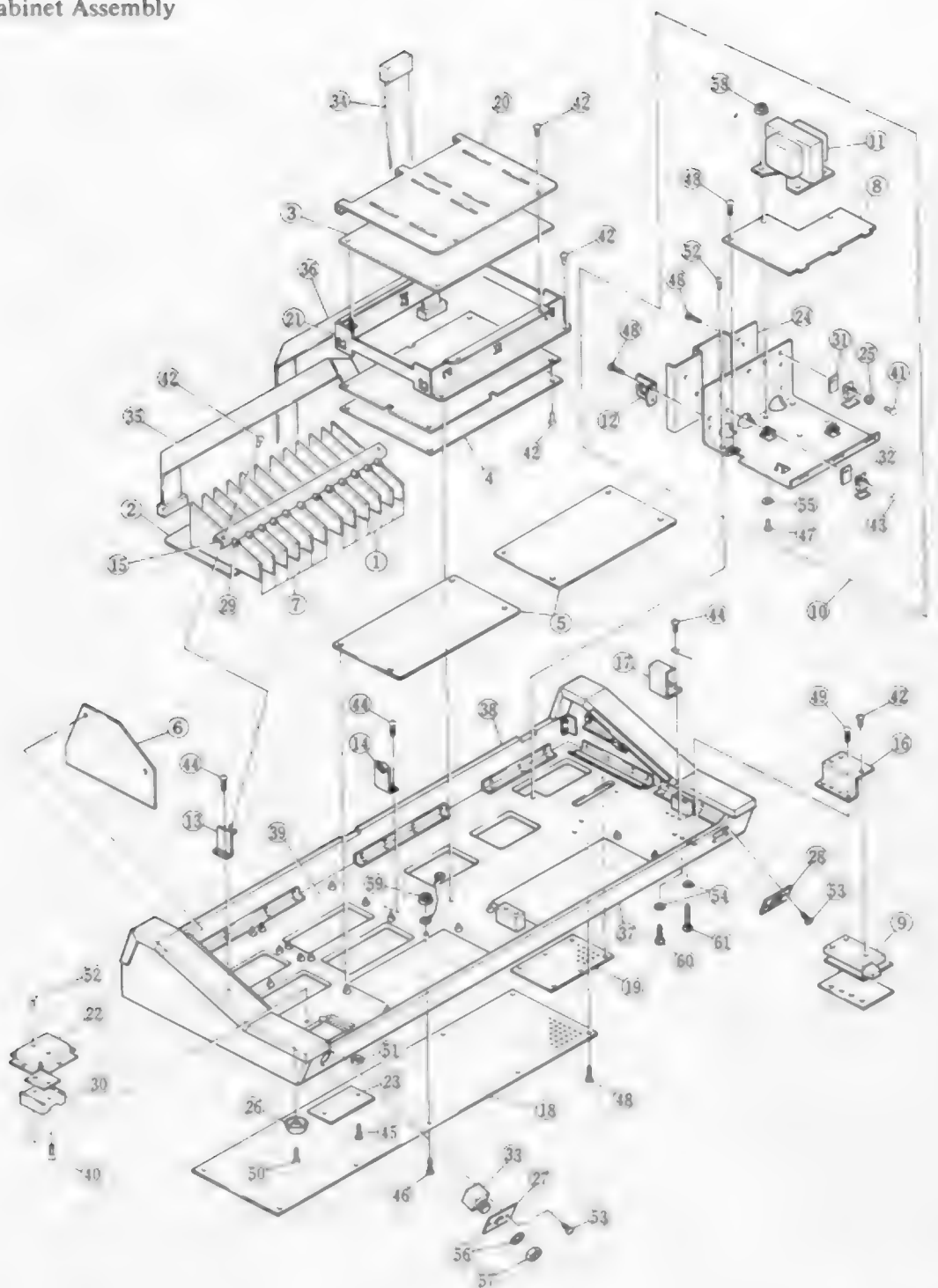
Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets
	KA 40 06 00	Slide Switch	2 - 2 (NS)	スライドスイッチ	OUTPUT ON/OFF PORT, GLIS	
	KA 40 06 30	- do. -	2 - 3 (S)	"	N/S/U (MODE)	
	KA 40 07 00	- do. -		"	PGM Lock	
	KA 40 08 00	- do. -	6	"	FEET	
	KA 40 08 10	- do. -		"	Keycode ON/OFF	
	KA 90 17 00	Push Switch	Gray	プッシュスイッチ		
	KA 90 17 10	- do. -	White	"		
	KA 90 26 80	- do. -	Red	"		
	KA 00 01 30	Linear Encoder		リニアエンコーダー	TEMP, TIME, EG, DEPTH ADSR, CUTOFF, RESO	
	KA 40 08 30	Voltage Selector		電 圧 切 換 器		
	KC 00 12 10	Relay	SC12D2 O(M)	リ レ -		
	K 00 02 90	Photo Coupler	P873 13	フォトカプラー		
	K 00 03 20	Photo Interrupter	GP-450F	フォトインタラプター		
	KB 00 03 60	Fuse	3A 250V	ヒ ュ - ス		J
	KB 00 06 90	- do. -	T2.5A 250V	"		G
	KB 00 07 40	- do. -	T1.6A 250V	"		G
	K 00 26 50	- do. -	3A 250V	"		U, C
	QU 00 17 00	Ceramic Vibrator	CSA4.91MT	セラミック発振子		
	GD 90 02 50	Output Transformer		アウトプットトランス		
	GE 90 05 00	Coil		コ イ ル		U
	GE 90 05 30	- do. -		"		U
	NB 81 60 60	Card Reader Unit		カードリーダーユニット		
	NB 81 79 00	Power Supply Unit		電 源 Ass'y		J
	NB 81 79 10	- do. -		"		U, C
	NB 81 79 30	- do. -		"		G
	NB 81 80 00	Power Transformer Unit		電源トランスユニット		
	MG 00 10 30	AC Cord		電 源 コ ー ド		J
	MG 00 10 40	- do. -		"		U
	MG 00 10 50	- do. -		"		G
	MG 00 11 20	- do. -		"		C
	MZ 80 95 90	Flat Cable Ass'y, CPB		絶 縁 ケ ー ブ		
	MZ 80 96 00	- do. - , MOX		"		
	MZ 80 96 10	- do. - , MOY		"		
	CB 07 28 80	Insulation Bushing		絶 縁 ブ ッ シュ		
	L 00 04 60	Mica Base		マイカベース		
	L 00 05 80	- do. -		"		
	LB 20 18 20	AC Inlet		A C イ ン レ ッ ト		J, U, C
	LB 20 18 60	- do. -		"		G

* New Parts (新規部品)

Ref. No.	Part No.	Description		部 品 名	Remarks	Common Model	Markets
	LB 30 01 60	Cannon Socket		キャノンソケット			
	LB 20 11 20	Phone Jack		フォンジャック			
	LB 20 15 40	- do. -	S-G7652	"			
	LB 30 14 90	- do. -	S-G7633	"			
	LB 40 10 00	- do. -		"			
	LB 30 09 60	Connector Base Pin	3P	2.5ピッチベースピン	Bottom Entry		
	LB 50 03 70	- do. -	5P	"	- do -		
	LB 60 29 90	- do. -	6P	"	- do -		
	LB 60 30 00	- do. -	7P	"	- do -		
	LB 60 30 10	- do. -	8P	"	- do -		
	LB 60 30 60	- do. -	9P	"	- do -		
	LB 60 30 70	- do. -	10P	"	- do -		
	LB 60 31 10	- do. -	11P	"	- do -		
	LB 30 07 30	- do. -	3P	"	Top Entry		
	LB 40 05 70	- do. -	4P	"	- do -		
	LB 50 02 50	- do. -	5P	"	- do -		
	LB 60 29 40	- do. -	6P	"	- do -		
	LB 60 24 60	- do. -	7P	"	- do -		
	LB 60 24 90	- do. -	8P	"	- do -		
	LB 60 30 40	- do. -	9P	"	- do -		
	LB 60 24 70	- do. -	10P	"	- do -		
	LB 60 30 90	- do. -	11P	"	- do -		
	LB 30 07 50	- do. -	3P	"	Side Entry		
	LB 40 05 90	- do. -	4P	"	- do -		
	LB 50 02 70	- do. -	5P	"	- do -		
	LB 60 25 00	- do. -	7P	"	- do -		
	LB 30 07 20	Connector Housing	3P	2.5ピッチハウジング			
	LB 40 05 60	- do. -	4P	"			
	LB 50 02 40	- do. -	5P	"			
	LB 60 28 10	- do. -	6P	"			
	LB 60 24 40	- do. -	7P	"			
	LB 60 24 80	- do. -	8P	"			
	LB 60 30 30	- do. -	9P	"			
	LB 60 24 50	- do. -	10P	"			
	LB 60 30 80	- do. -	11P	"			
	LB 60 24 30	Flat Cable Connector	30P	ヘ ッ ダ -	Top Entry		
	LB 60 35 50	- do. -	26P	"	- do -		
	LB 60 42 50	- do. -	30P	コ ネ ク タ -	Side Entry		
	LB 30 11 90	Receptacle Housing	3P	レセプタクルハウジング			
	LB 40 08 30	- do. -	4P	"			
	LB 60 37 60	- do. -	7P	"			
	LB 60 37 70	- do. -	8P	"			
	LB 30 11 80	Plug Housing	3P	プラグハウジング			
	LB 40 08 20	- do. -	4P	"			
	LB 60 37 40	- do. -	7P	"			
	LB 60 37 50	- do. -	8P	"			
	LB 60 15 40	Plug	9P	プ ラ ク			
	LB 60 15 50	Cap	9P	キ ャ ッ プ			

* New Parts (新規部品)

B. Cabinet Assembly



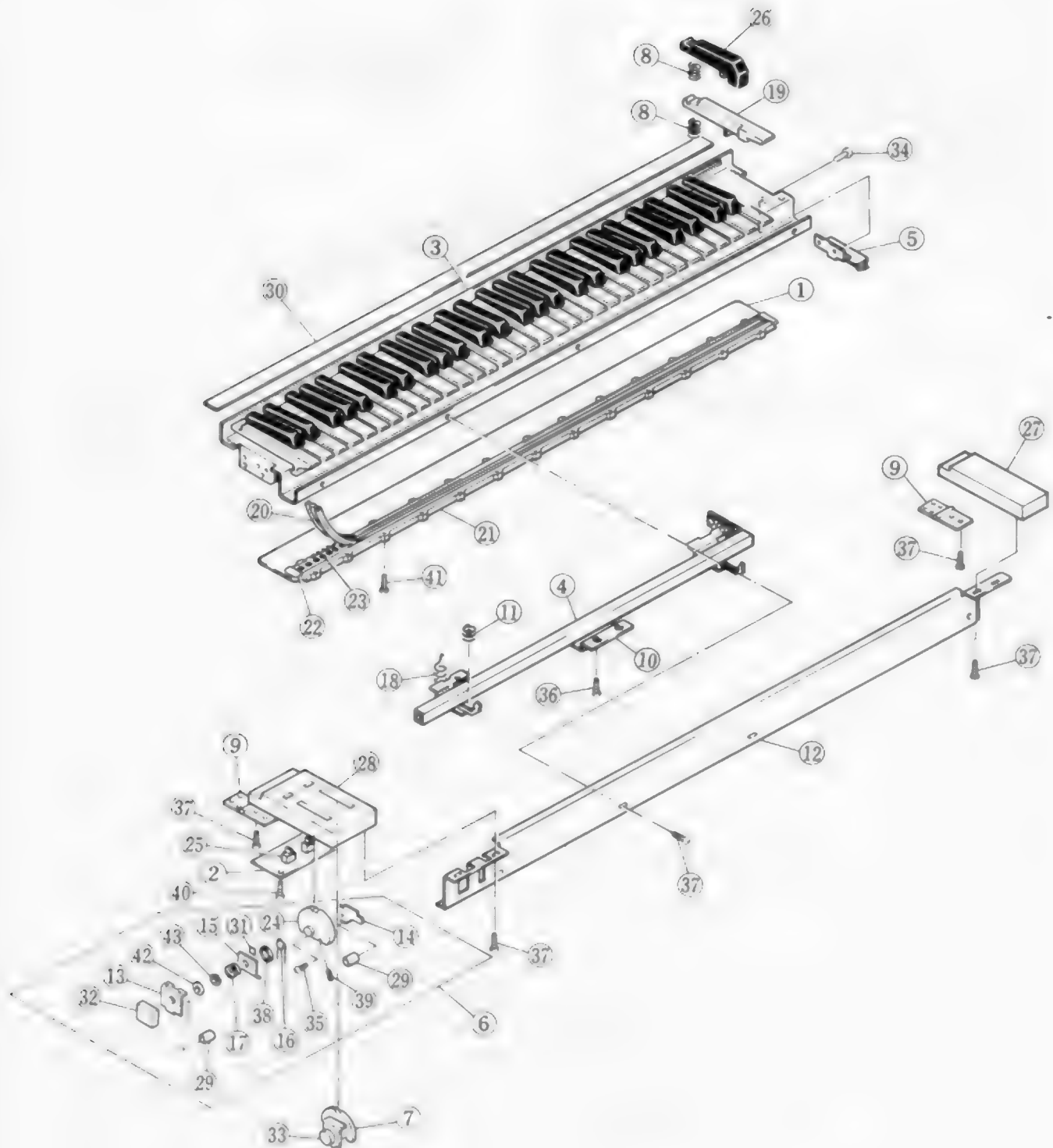
Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets
* 1	NA 80 77 30	Circuit Board, MY	# 8696	M Y シ ー ト		
* 2	NA 80 77 40	- do. - , MO	# 8697	M O "		
* 3	NA 80 77 50	- do. - , CPU	# 8698	C P U "		
* 4	NA 80 77 60	- do. - , DIF	# 8699	D I F "		
* 5	NA 80 77 70	- do. - , LF	# 8700	L F "		

* New Parts (新規部品)

Ref No.	Part No.	Description		部 品 名	Remarks	Common Model	Markets
6	NA 80 78 10	Circuit Board, ET	# 8704	E T シ ー ト			
7	NA 80 82 70	- do. - , MX	# 8696	M X "			
8	NA 80 82 80	- do. - , DC	# 8707	D C "			J
"	NA 80 82 90	- do. - , - do. -	- do. -	"			U. C
"	NA 80 83 00	- do. - , - do. -	- do. -	"			G
9	NB 81 60 60	Card Reader Unit		C R ユ ニ ッ ト		GS1, 2	
10	NB 81 79 00	Power Supply Unit		電 源 ユ ニ ッ ト			J
"	NB 81 79 10	- do. -		"			U. C
"	NB 81 79 30	- do. -		"			G
11	NB 81 80 00	Power Transformer Unit		電源トランスユニット			
12	AA 81 63 00	Holder, Connector		コネクタホルダー			
13	AA 81 72 30	Stay	(L)	ス テ ー			
14	AA 81 72 40	- do. -	(R)	"			
15	AA 81 72 50	C.B. Stopper		シ ー ト 押 え			
16	AA 81 72 70	Holder, CR Unit		C R 取 付 板			
17	AA 81 72 80	Keyboard Support		鍵盤 サ ポ ー ト			
18	AA 81 73 50	Radiator Net		放 熱 ネ ッ ト			
19	AA 81 74 40	- do. -		"			
20	AA 81 75 10	Shield Plate		シールドプレート			
21	AA 81 75 20	Shield Case		シールドケース			
22	AA 81 75 30	Battery Cover		バッテリーカバー			
23	AA 81 75 40	Cover		蓋			J
"	AA 81 75 50	- do. -		"			U. C, G
24	BA 80 54 50	Heat Sink		放 熱 板			
25	CB 07 28 80	Insulation Bushing		絶 縁 ブ ッ シ ュ			
26	CB 80 12 70	Leg		ゴ ム 脚			
27	CB 81 42 30	Phone Panel		フ ォ ー ン パ ネ ル			
28	CB 81 89 60	Card Reader Escutcheon		リーダーエスカッション			
29	CB 81 90 10	Cushion Rubber		クッションゴム			
30	CB 81 90 60	Battery Case		電 池 ケ ー ス			
31	IL 00 04 60	Mica Base		マイカベース			
32	IL 00 05 80	- do. -		"			
33	LB 40 01 00	Phone Jack		フ ォ ー ン ジャ ッ ク			
34	MZ 80 95 90	Flat Cable Ass'y, CPB		線 材 キ ッ ト			
35	MZ 80 96 00	- do. - , MOX		"			
36	MZ 80 96 10	- do. - , MOY		"			
37	DA 80 64 20	Front Board Ass'y		ロ 板 集 成			
38	DA 80 64 30	Back Board Ass'y		背 面 板 集 成			
39	DA 80 64 40	Bottom Board Ass'y		底 板 集 成			
"	DC 82 67 00	Case Ass'y		外 装 組 立			
40	EB 33 00 60	Flat Head Screw	M3 x 6 BL	皿 小 ネ ジ			
41	ED 32 60 60	Bind Screw	M2.6 x 6 BL	バインド小ネジ			
42	ED 33 00 60	- do. -	M3 x 6 BL	"			
43	ED 33 01 00	- do. -	M3 x 10 BL	"			
44	ED 33 01 20	- do. -	M3 x 12 BL	"			
45	ED 33 01 60	- do. -	M3 x 16 BL	"			
46	ED 33 02 00	- do. -	M3 x 20 BL	"			
47	ED 34 01 00	- do. -	M4 x 10 BL	"			
48	EI 33 01 00	Bind Tapping Screw	3 x 10 BL	バインドタッピングネジ			
49	EI 33 01 20	- do. -	3 x 12 BL	"			
50	EI 34 01 60	- do. -	4 x 16 Ye	"			
51	CB 81 29 20	Stopper		グリップ型止め輪			
52	EL 34 01 40	Sems Screw	M4 x 14 BL	セムス小ネジ			

* New Parts (新規部品)

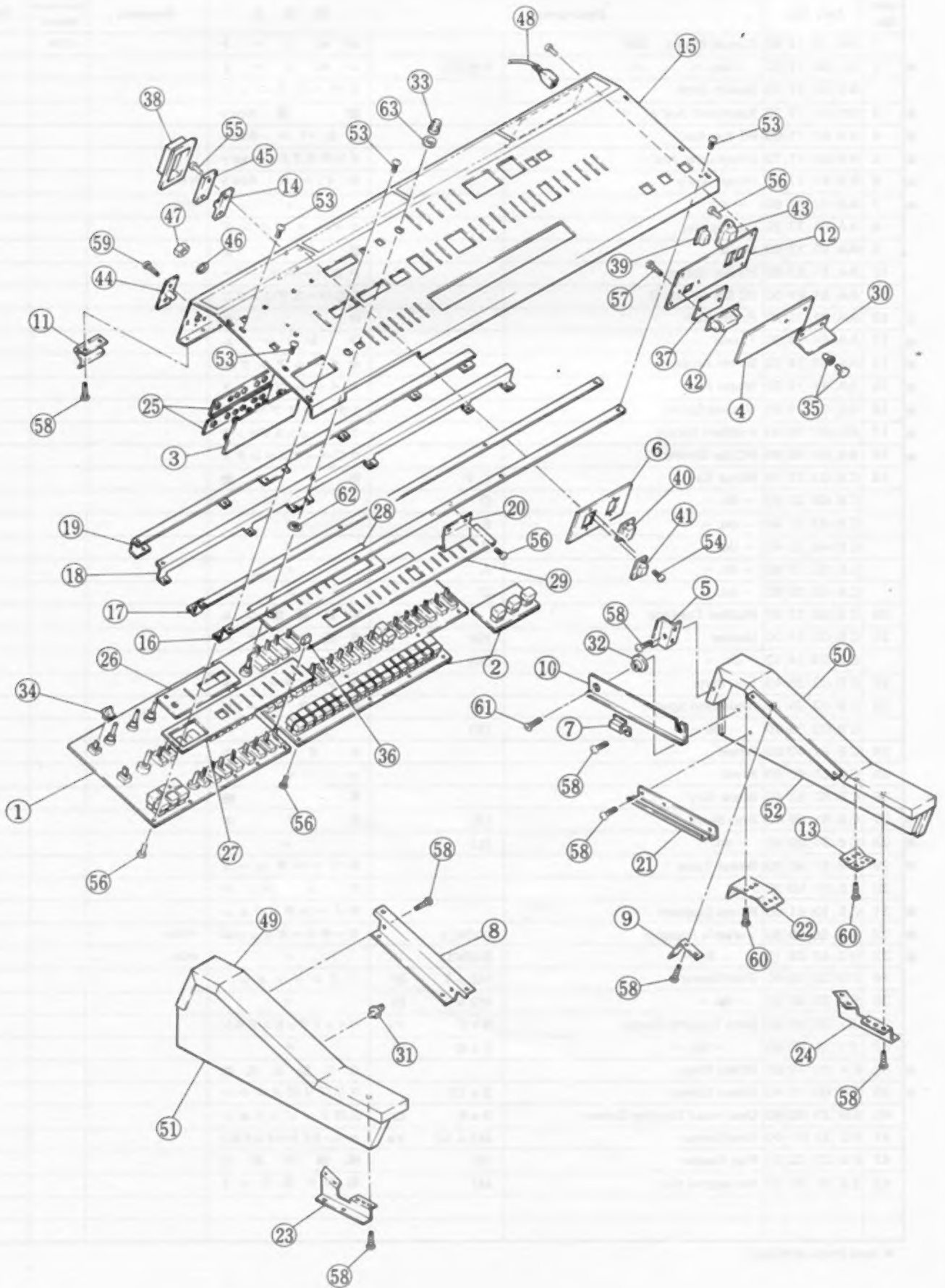
C. Keyboard Assembly



Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets
1	NA:10:17:60	Circuit Board, MK	M K シ ー ト		CP10	
2	NA:80:77:80	— do. — , JK	#8701 J K シ ー ト			
	NB:81:47:70	Switch Unit	ス イ ッ チ ユ ニ ッ ト			
3	NB:81:77:50	Keyboard Ass'y	鍵 盤 Ass'y			
4	NB:81:77:60	PC Bar Ass'y	P C バ ー Ass'y			
5	NB:81:77:70	Interrupter Ass'y	イ ン タ ラ プ タ Ass'y			
6	NB:81:77:80	Wheel Ass'y	ホ イ ール Ass'y	PITCH		
7	NB:81:77:90	— do. —	〃	MOD.		
8	AA:04:37:20	Coil Spring	コ イ ル ス プ リ ン グ			
9	AA:81:12:00	Hinge	铰 番			
10	AA:81:63:80	PC Bar Stopper	P C バ ース ト ッ パ ー			
11	AA:81:64:00	PC Bar Spring II	P C バ ース プ リ ン グ II			
12	AA:81:71:70	Front Rail	ロ 金			
13	AA:81:74:60	Frame	フ レ ー ム			
14	AA:81:74:70	Wheel Angle	ホ イ ール ア ン グ ル			
15	AA:81:74:80	Wheel Plate	ホ イ ール プ レ ー ト			
16	AA:81:74:90	Return Spring	リ タ ー ン ス プ リ ン グ			
17	AA:81:75:00	Friction Spring	フ リ ク シ ョ ン ス プ リ ン グ			
18	AA:81:75:60	PC Bar Spring I	P C バ ース プ リ ン グ I			
19	CB:03:22:10	White Key	C, F 白 鍵			
	CB:03:22:20	— do. —	D 〃			
	CB:03:22:30	— do. —	B, E 〃			
	CB:03:22:40	— do. —	G 〃			
	CB:03:22:50	— do. —	A 〃			
	CB:03:22:60	— do. —	C' 〃			
20	CB:03:23:30	Rubber Contact	可 動 導 電 ゴ ム			
21	CB:03:24:00	Holder	(Q) 基 板 ホ ル ダ ー			
	CB:03:24:10	— do. —	(K) 〃			
22	CB:03:35:40	End Plate	エ ン ド プ レ ー ト			
23	CB:03:35:70	Insulation Spacer	(Q) 絶 縁 ス ペ ー サ			
	CB:03:35:80	— do. —	(K) 〃			
24	CB:81:40:50	Wheel	ホ イ ール			
25	CB:81:46:90	Knob	ツ マ ミ			
26	CB:81:83:40	Black Key	黒 鍵			
27	CB:81:89:40	End Block	(R) 拍 子 木			
28	CB:81:89:50	— do. —	(L) 〃			
29	CB:81:90:20	Wheel Tube	ホ イ ール チ ュ ー ブ			
30	CC:01:50:20	Felt	フ ェ ル ト			
31	CE:10:41:90	Wheel Cushion	ホ イ ール ク ッ シ ョ ン			
32	HR:50:00:30	Variable Resistor	B10KΩ ロ ー タ リ ー ボ リ ュ ム	PITCH		
33	HS:42:03:10	— do. —	B10KΩ 〃	MOD.		
34	ED:33:00:40	Bind Screw	M3 x 4 BI バ イ ン ド 小 ネ ジ			
35	ED:33:00:80	— do. —	M3 x 8 BI 〃			
36	Ei:03:00:60	Bind Tapping Screw	3 x 6 Ye バ イ ン ド タ ッ ピ ン グ ネ ジ			
37	Ei:34:00:80	— do. —	4 x 8 BI 〃			
38	EK:80:12:60	Wheel Ring	C S 型 止 め 輪			
39	EK:80:12:70	Wheel Screw	3 x 12 ス リ ワ リ 付 止 め ネ ジ			
40	EM:23:00:60	Oval Head Tapping Screw	3 x 6 Cr 丸 頭 タ ッ ピ ン グ ネ ジ			
41	EZ:33:01:40	Bind Screw	M3 x 14 Ye エ ー バ ー タ イ ト バ イ ン ド ネ ジ			
42	EV:22:00:70	Flat Washer	7S 特 殊 平 座 金			
43	EZ:30:70:10	Hexagonal Nut	M7 特 殊 六 角 ナ ッ ト			

※ New Parts (新規部品)

D. Control Panel



Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets
1	NA 80 77 10	Circuit Board, CPA	# 8694 C P A シ ー ト			
2	NA 80 77 20	- do. - , CPB	# 8695 C P B "			
3	NA 80 77 80	- do. - , JK	# 8701 J K "			
4	NA 80 83 20	- do. - , AC	# 8726 A C "			J
	NA 80 83 30	- do. - , - do. -	- do. - " "			U
	NA 80 83 40	- do. - , - do. -	- do. - " "			G
	NA 10 72 60	- do. - , - do. -	- do. - " "			C
5	AA 05 24 40	Panel Holder	パ ネ ル 取 付 金 具			
6	AA 05 27 60	Switch Holder	ス イ ッ チ 取 付 金 具			
7	AA 80 25 40	Stay Holder	ス テ ー 押 え 金 具			
8	AA 81 11 50	Panel Holder (L)	パ ネ ル 取 付 金 具			
9	AA 81 12 20	Prop Holder	引 掛 け 金 具			
10	AA 81 12 30	Stay	ス テ ー			
11	AA 81 12 40	Hinge	蝶 番			
12	AA 81 55 10	AC Panel	A C パ ネ ル			G
	AA 81 64 50	- do. -	"			J, U
	AA 81 76 10	- do. -	"			C
13	AA 81 56 40	Side Arm Angle	補 強 ア ン グ ル			
14	AA 81 65 00	Stopper Bracket	ス ト ッ パ ー ブ ラ ケ ッ ト			
15	AA 81 71 80	Control Panel	コ ン ト ロ ー ル パ ネ ル			
16	AA 81 71 90	Circuit Board Angle (A)	シ ー ト 取 付 ア ン グ ル			
17	AA 81 72 00	- do. - (B)	"			
18	AA 81 72 10	- do. - (C)	"			
19	AA 81 72 20	- do. - (D)	"			
20	AA 81 72 60	Panel Holder	パ ネ ル 受 け 金 具			
21	AA 81 73 00	Angle	シャ ー シ 押 え 金 具			
22	AA 81 73 20	- do. -	補 強 金 具			
23	AA 81 73 30	Side Arm Angle (L)	固 定 金 具			
24	AA 81 73 40	- do. - (R)	"			
25	AA 81 76 00	Jack Spacer	ジャ ッ ク ス ペ ー サ ー			
26	CA 80 29 50	Dust-Proof Cover (A)	防 塵 ク ロ ス			
27	CA 80 29 60	- do. - (B)	"			
28	CA 80 29 70	- do. - (C)	"			
29	CA 80 29 80	- do. - (D)	"			
30	CA 80 31 10	Fuse Cover	ヒ ュ ー ズ カ バ ー			U
31	CB 08 70 00	C.B. Holder	シ ー ト ホ ル ダ ー			
32	CB 81 14 30	Bushing	ブ ッ シ ュ			
33	CB 81 21 40	Knob White	ツ マ ミ	Rotary VR		
34	CB 81 46 90	- do. -	"	Slide SW		
35	CB 81 57 40	Nylon Rivet	ナイ ロ ン リ ベ ッ ト			
36	CB 81 69 80	Knob White	ツ マ ミ	Linear Encoder		
	CB 81 69 90	- do. - Yellow	"	Slide VR		
37	CB 81 78 90	Spacer	ス ペ ー サ ー			
38	CB 81 79 10	Cover	カ バ ー			
39	KA 10 08 10	Power Switch	パ ワ ー ス イ ッ チ			G
	KA 10 10 60	- do. -	"			J, U
	KA 30 06 00	- do. -	"			C
40	KA 40 07 00	Slide Switch	ス ラ イ ド ス イ ッ チ	PGM Lock		
41	KA 40 08 10	- do. -	"	Keycode ON/OFF		
42	KA 40 08 30	Voltage Selector	電 圧 切 換 器			
43	LB 20 18 20	AC Inlet	A C イ ン レ ッ ト			J, U, C
	LB 20 18 60	- do. -	"			G
44	LB 30 01 60	Cannon Socket	キャ ノ ン ソ ケ ッ ト			

* New Parts (新規部品)

